

**FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.**

[PRICE 6D.]

Mr. H. HOUTCHOUX said he had great pleasure in moving a resolution to promote in any way the important object in view, for it was more important than might at first sight appear, not only as regarded the comfort of the numerous inhabitants of this and other manufacturing districts and towns, but in a high degree also in a pecuniary respect; not as regarded manufacturers and the proprietors of steam engines alone, but as the inhabitants generally, from the lowest to the highest, as regarded the cost of washing, cleaning, and keeping clean their persons, garments, furniture, and houses. He had no hesitation in saying, that the loss arising from the expense of smoke in this district, beyond the quantity that would be made—(and he spoke practically, for he had ascertained to what extent it might be abated)—was comparable to a pecuniary loss to this town alone of not less than 100,000*l.* per annum. This would be found, if we looked at the weekly expense of the smaller classes in washing alone, at the wear and tear of clothing in that service, as compared with what it is in the country districts, at the loss on householders' stocks, at the destruction of furniture, at the frequency with which we were obliged to paint our houses, and that excessive cleaning requisite to make our dwellings at all habitable—all contaminated by the dense and filthy atmosphere we breathe. But, supposing there were no pecuniary result at all, he thought the general feeling would be for the abatement of this mode of smoking. He thought there was neither a natural taste to make one smoke, nor could it be acquired. He believed if the country generally were aware that it might be abated to the extent it was susceptible of being abated, they would show themselves fully as impatient of it, as of taxation. It certainly did not affect not only our comfort, but our pockets, and he regarded the protest as an important one for the comfort and the abatement of this town. It might be asked what new principle had been fairly brought forward. For the last twenty years science had introduced science, and this sense of impotence was, that they had decidedly failed, although he had given reasons both on various occasions, even twenty years ago, of smoke being once introduced; but to practice it was found difficult, if not impossible, to secure the abatement of smoke; and, after the eye of the smoke was corrected, the smoke issuing from the chimneys assumed the same black hue as before. And he said that the subject lately laid before us in a more scientific manner, and, as a practical man, he must express his thanks to Mr. C. W. Williams, who had, in his pamphlet, entitled *the theory of a superior smoke*—it shows what took place in the furnace, and during combustion, and gave the exact conditions by which perfect combustion could be obtained, and the means by which smoke itself, as he conceived, could be effected. These instructions had adopted place upon a steamier principle, and he might quote Mr. Hall, who was present at the Leeds meeting, and whose paper was identical in principle with that of Mr. Williams as to what the chemical ingredients of the new demand, through diffusion in his mode of application. He went into the place of the cessation to go minutely into scientific details, but, as it might help the belief that the thing could be done, to show the why and wherefore, and the manner wherein, he would allow himself not to say any principle, but to the improvement brought forward by Mr. Williams.



**Fossil Remains.**—In the strata of the cutting for the Southern Railway, at Marston, a splendid fossil elephant or mammoth (one each of which weighs about 20 lbs.) has been discovered twenty feet below the surface. This fact will be interesting to geologists, as the remains of this animal have never before been found so low in the strata of the chalked formation in which the cutting is supposed to be made, and appears to prove that the Marston hill is composed of a recent deposit above the chalk clay. —*Manchester Journal.*

ROYAL POLBEROU MINING COMPANY—JUDGMENT.

**TALACRE COAL AND IRON COMPANY.**

...are not now arguing. In this long history there is no involvement of deception practiced by the attorney on his clients. The rule must be discharged. W

in February, 1941, a meeting was held at Mr. Wood's office, when it appeared that

LAW OF MINES AND MINERALS--ALLEGED TRESPASS.

The Vice-Chancellor said, the reviewer having been appointed on behalf of the Council, who was obliged to be present, the title of the book, because the conditions

AGRICULTURAL BANK OF IRELAND—LAW CHARGES.

10. The report requested that action be taken to the effect of the following:

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William Shakespeare — No. 100000 is the name of an individual of

August Manufactures of Iron and Steel in Lancashire...



*Course of Civil Engineering, comprising Plane Trigonometry, Surveying, and Levelling, with their Applications, &c.* By JOHN GREGORY, Esq., C.E. S. J. Meehan, Dublin. 8vo., pp. 382. Illustrated with plates and wood-cuts. This work is, as it professes to be, one of an elementary character, arranged so as to answer the purpose of instruction, while, from the wide range taken, it must be useful to those advanced in science, but more especially to land proprietors, and others interested in surveys, whether of landed property, railways, mills, canals, or docks, and may be said to be a useful *addendum* to the library, or to the "work and mapping" table. Before entering into the material of which the work is composed, it is right to observe, that its author, with a highly praiseworthy motive, directs attention to its more immediate application to Ireland, where, it must be confessed, they are somewhat behind this country, and where the application of science, and a proper understanding of the position in which various localities of that country are placed, whether for agricultural, mining, draining, or other purposes, is as much to be desired, we feel it only due to the author to make the following extract from a modest and brief, but comprehensive, preface:—

abstract from a model and error, and which may be

"At a period when the development of the natural resources of Ireland has become a subject of anxious solicitude throughout the land—when agricultural and farming societies are being formed in almost every district, with a view to improve the condition of both husband and tenant, whose interests ought to be at all times identified; when strenuous exertions are made for the encouragement of native arts and manufactures—when our university is extending the sphere of its useful and solid instruction to the young men of the country—when engineering—when a new school of civil engineering, agriculture, and commerce, is calculated to confer national benefit, by training up a new class of men, capable, to explore the hidden treasures of our island, rich in soil, minerals, and metals, peculiar in its geological formation, and favourably situated as regards commercial intercourse with the other countries of Europe; when the formation of railroads through the kingdom is engaging the attention of our Legislature; a measure devoutly to be desired, as it will eminently calculated to improve the condition of the nation generally, by creating employment, facilitating the intercourse of the different parts of the country, and annihilating time and space, drawing the most remote and the most distant districts to the outskirts of the market; when extensive improvements are in progress on the River Shannon and its tributaries—where, by the inland navigation will be extended through the greater length of the country, from one extremity to the other, and vast quantities of land rescued from the deep—when an English company is about to be formed in the reclamation of bog and other waste lands; a speculation in which the companies of Ireland are prospering beyond limit for his country—when the mining companies of Ireland are being made in their most sanguine exertions to explore the hidden treasures of the island, and when so many companies are being formed by England—at such a period, a work so necessary to the country, cannot fail to excite a degree of interest commensurate with the all-pervading nature of the subjects of which it treats, and with the amount of information it contains."

It contains may thus be classified:—Trigonometry, land surveying, parish surveying, maritime, and subterranean surveying; these embrace the principal points for the acquisition of knowledge by the student and, and, as we have already observed, will be found useful to those more experienced, while the information rendered is in so easy a form as to render it comprehensive to those who make engineering their study, but to whom a knowledge may be useful. Trigonometry, which forms one-half of the volume, requires but little comment, as its principles are merely developed in a pleasing manner, with illustrations and examples—in fact, forming a text book, so that it requires only to be studied to render the student master of his subject. Logarithmic tables, occupying forty-six pages, close this portion of the work. The practice of land surveying is best demonstrated by example, and several rules given, whereby any particular object may be attained; these are also accompanied by diagrams with plates, so as to render the subject treated upon simple and comprehensive; the several instruments employed in this as well as trigonometry and other matters contained in the volume, are fully described, with useful instructions and examples. Maritime surveying, which partakes of a mixed character, as not only determining the exact position of any headland, inlet, or other object on the coast, at the same time involves the important question as to the situation of rocks, shallows, and soundings—thus being twofold in its objects and importance; this subject is treated on briefly, as the rules laid down in the preceding papers illustrate the application in this case. Trigonometrical surveying occupies some space, and, like most of the other chapters into which the volume is classed, enters fully into the subject. We now approach subterranean surveying, as applied to mines, collieries, &c., and here we are bound to state, that we are much disappointed; there is but little said on the subject, and that little applies to surface rather than subterranean surveying, for we do not find one word as to the mode of determining the direction of a lode—its underlay, the driving of levels, sinking winzes, or any of those operations which we have been taught to consider as coming under the term “subterranean.” In this portion of the work we confess ourselves disappointed. It is true, that the author does not take credit in his introduction for any special notice being taken of “maritime and subterranean surveying”—with these exceptions, the work deserves our good word and recommendation.

*Geology for Beginners.* By G. F. RICHARDSON, F.G.S., &c. Baltimore, Maryland. 8vo., 530 pp. 1904. 10s. 6d. A book intended for beginners which

Regent-street. No. 430 pp.

This work is, perhaps, we may say, the best adapted for beginners which has been published, comprehending not only an outline of geology, but embracing mineralogy, physical geology, fossil conchology, botany, and palæontology, with directions to the "tyro," whereby he may be enabled to form collections, and generally to cultivate the science. The author is well known as a lecturer of geology, and being connected with the British Museum as one of its efficient officers. The object in the publication of the present volume, as stated by Mr. Richardson, is that of presenting to the public a work which shall be "in short, more introductory than the excellent Introduction of Mr. De la Beche—more elementary than the admirable elements of Mr. Lyell." The new publication will be found not only adapted to the use of the student in geology, but peculiarly to schools and classes of literary and scientific institutions; indeed, it is just such a work as will convey knowledge, while it affords amusement, and, without technical phraseology, is written in a style sufficiently scientific to enable the reader to comprehend other works assuming a higher grade. The embellishments—251 in number—embrace various diagrams and sections of geological, mineralogical, and organic remains, as well as relating to crystallography, botany, and conchology; they are well executed, and illustrative of the subjects treated upon, following in the wake of *Mantell's Wonders of Geology* and *Burr's Introduction*, but superior to the latter from its more extended ground. The author of the work before us justly remarks, in observing on the science, that "even the variety, extent, and novelty of geological investigation would never have procured for it so high a degree of popularity and favour as it has now attained; nor have enrolled among its students men of all ranks, from the peer and the philosopher to the labourer in the quarry, and the workman in the mine; were it not recommended by the more valuable advantages of practical utility, and application to some of the most essential wants of mankind."

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To follow the writer would be to exceed our limits. The reasons which are appended to several of the chapters will be found, in our opinion, the most useful, if not the most interesting, part of the book, for it condenses the information conveyed, and in, perhaps, the best method of alluding to the statistical & political knowledge of the subject, by the illustrations necessary to enable him to give proper taxpayers. The facts which establish the work are able stated, and add much to its value. The several formations are treated in a popular manner, with brief notices interspersed on every subject allied with primary calculations to success and interest. We have no doubt but that

the volume will have, as it deserves, an extensive circulation, and encourage the author to renewed exertions in the development and diffusion of geological knowledge.

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referred to our common counts of law or equity.

Mr. Wells having noted that the Prince of Wales is Duke of Cornwall by birth, observes that the estates and rights of the Duchy of Cornwall were originally very extensive, being originally the possessions of the earls of that county; but the earldom reverting to Edward the Third, upon the death of John, of Eltham, his younger brother, he created it into a dukedom in favour of his son (afterwards known as the Black Prince), whom he invested with all the estates, rights, and privileges, which had been formerly enjoyed by all the earls; this grant was subsequently confirmed by Parliament (1 Edward III.), granting the duchy to Prince Edward in these words—"To have and hold, &c., to the said duke, and to the first-born sons of him, and of his heirs, kings of England and dukes of the said place, that hereditarily succeed in the kingdom of England." Since the death of George the Fourth, the title, until the recent birth of the Prince of Wales, was held in abeyance by the Crown, who received the revenues, which are now under the control of a council, of which Prince Albert is the head. The whole revenues of the duchy were computed, on the average of three years (after the death of the Black Prince), to amount to 24637. 7s. 3d. per annum; of this income, 23190. 7s. 3d. arose from the Cornish estates, including 10161. 1s. 4d., which were the profits of the Stannaries, while in the reign of Henry the Eighth the clear annual revenue was 10,095l. 4s. 3d. In the year 1833-4, the eighth the clear annual revenue was 10,095l. 4s. 3d. the revenues amounted to the author's state, from information he then acquired, "judicious, impartial, and honest management," ought to have produced 30,000l. per annum. The revenues thus acquired is classed as follows:—1. The coinage duty of 4s. per revenue due to the duke, as lord of the Stannaries, upon all white tin coined ewt., payable to the duke, as lord of the Stannaries, upon all white tin coined ewt. in Cornwall or Devon—this duty, which was stated to yield 30,000l. per annum, has been abolished. The argument brought forward by Mr. Wells on the policy of such abolition, might, we think, be very readily met, for it appears to us that he has taken a wrong view as to the effect which such duty had upon our tin mines, or rather the adventurers, he assuming that it had no influence on the working of the mines, but was a mere question in which the lord was interested, comparing its working with that of silver, or lead tax, a rental of surface, being subject to such charges, or free, and we find the author to dwell on certain regulations which lead him to remark on the real pressure of the duty on the smelter being increased 50 per cent. It is strange that gentlemen like Mr. Wells, possessing ready access to information, should thus confound the smelter with the miner; the injury inflicted on the latter—the former, at all times, takes care of himself, the price of black tin being influenced and dependent on that of white tin in the market—as also the duties or charges to which it is subjected. The annual revenue from the duchy mines, previously to 1810, is stated to have been only two sums of 36l. to 49l., but their actual value, it is observed, may be gathered from the fact, that in that year 18,000l. was paid upon a grant of lease of the tin mines and tolls for three years. The author proceeds to remark on the custom of "blowding," which he cites the case of the Polberon Mines. In the course of his observations on this, as on other points affecting the interest of the duchy, we find that the efforts to protect the rights "were rather thwarted than assisted by some of the duchy officers," while no map, ancient or modern, was in the possession of the duchy; and he further unequivocally states, that "it is never known that in one instance any officer of the duchy has interfered to protect its rights." On the subject of the abolition of the coinage tax, we find that it was on the ground of expediency, and for the benefit of trade. How this agrees with the free trade principles of the Minister of the present day we cannot well comprehend, it being remembered that the burthen is merely transferred from the tinners to the country, being a charge on the consolidated fund, so that now our tin mines are near being destroyed, and from whence no revenue would, in such case, be derived. Government having secured the toll to the Queen, as a charge on the Consolidated fund, are now willing that the home miner should be sacrificed to the interests of the foreign miner.

With respect to the copper mines, these were let at an annual rent of 40¢, on payment of a fine of 12,000¢, the lease of which expired some eighteen months since. We have already said that the volume treating on "national finance," however important, is not one of those works to which our attention is naturally directed, but, as comprehending many interesting and important facts connected with the mining interests of this country, to which we have only briefly adverted, we hesitate not to recommend it to those who, whether feeling an interest in the general subjects treated on, or those immediately connected with minerals; the matter appears to us to be carefully collated, and the remarks generally judicious, although we can observe, in some few instances, that the judgment is warped by prejudice, or confused by unconnected notions.

The *Practical Mechanic and Engineer's Magazine*, Glasgow; and Hebert, Cheapster, London. Quarto, 240 pp., with plates.

The first half-yearly volume of this useful publication has lately come to hand, and is deserving of our warmest commendation, as containing much valuable matter, rendered in a clear and popular form, in furthrightly sum-  
bers, or parts, consisting of thirty-eight pages of letter-press, with plates and other illustrations. The volume now before us is accompanied by 400 plates of other illustrations, which are executed in a manner highly creditable to the

and wood-cuts, which are executed in those which may interest the practical artists. The articles are not confined to a wider range, and, if any fault can be found with the work, it is that it has assumed a ground too purely scientific, embracing Natural Philosophy, Chemistry, Mathematics, Geology, Political Economy, Anatomy, Civil History, and other subjects, which, however ably written, and valuable to the general reader, are not immediately directed to the capacity of the practical mechanic and engineer, to whom the work otherwise promises to be of great value. The style in which the several articles are written may be judged of by the extracts we have occasionally made from its pages, and the manner to which the work is "got up" is highly creditable. The eighth part, being the last published, is also before us, and when we refer to its contents, as embracing First Readings in Political Economy, Natural Philosophy and Chemistry, Geology, Anatomy, and Physiology, History, Papers on the Distinctive Characters of Animals, and other abstract questions, we think it will be admitted that its title is not in excess with its contents. We have, however, to repeat, that the work is ably edited—with much valuable information is afforded—that, moreover, it is one of the cheapest periodicals we know—but, after all, it is not what it is in itself.—*The Practical Mechanic and Engineer's Magazine.*

**The Mirror. A Poem—founded on facts. By the Author of "Nothing Nice."**

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that "Furdy D— is one of half a dozen who appointed to watch the movements of the miners on pay-days and Sundays, and to report thereon." We give the conclusion of the note appended to the verses—"This is done to prevent them going into any shop, though one in general trade, in which wine, beer, or spirits are sold. We need scarcely add, that the person so offending may be a man of character and intelligence, who could not be suspected of violating the solemn pledge of temperance; but, at the same time, may want to present himself to purchase clothes, hardware, groceries, or ready-made shoes, which are a staple article of the trade of Bonmahon, and could not be done without the presence of his foot at least."

It would appear from the poem that Captain Petherick, the parish priest, and others, have enforced rules and regulations, which cannot be deemed otherwise than as highly objectionable, separating parties, and making distinctions which are not only calculated to engender ill-feelings, but to set an example which, if followed in Ireland, would be destructive of all social intercourse, not to observe on the injury done to property. We even find Captain P. descended to minor points, which are beneath the agent, and are calculated only to reflect discredit on the company he represents. We give the last four lines of the "poem" under review, and have only to refer our readers to the correspondence already adverted to, as well as some remarks which will be found in another place:—

in another place:—  
 "And hearts there are, with power of mind and soul,  
 Enough to free thee from the base control  
 Of pentioned knaves who wield the rod or crawl—  
 May every reader live to see their fall."

An Account of the Patent and other Methods of Preventing or Consuming  
By WILLIAM WEST. Simpkin and Marshall, London.

*Smoke.* BY WILLIAM WEST. *Smoke* is a subject on which this pamphlet embodies the result of the inquiries instituted at a meeting held in Leeds in January last, having for its object the consideration of the several modes which have been patented, or otherwise, for the prevention or consumption of smoke, and to determine on such measures as might appear desirable to be adopted, with the view of abating a nuisance of which no many complaints are made in every town throughout the United Kingdom. To the report of the proceedings, and notice of the several plans submitted, is appended a series of plates, descriptive of Chanter's, C. W. Williams's, Samuel Hall's, Rodda's, Lush's, and other principles, which are neatly executed, and render the descriptions clear, so as to be readily comprehended. We purport from time to time to make extracts from the pamphlet, confining ourselves at present to a brief review of its contents, and the principal modes on which it treats. The author, or compiler, in his introduction, observes that, although a variety of opinions exist as to the unhealthiness of smoke, or its extent, yet the general current of medical testimony abundantly confirms the popular opinion, and statistical facts tend to establish the point beyond reasonable doubt. The chemical fact that smoke cannot be virtually destroyed, as, for every particle of black smoke prevented, or rendered invisible, a corresponding quantity of deleterious gases must be produced, is admitted, although the author expresses his opinion that the gases evolved are so minute in their proportions, when mixed or diffused into the general atmosphere, to have any injurious effect, more especially when it is considered that the gas so formed during perfect combustion for the most part is carbonic, while the finely-divided solid carbon, or "smuts," which is the result of imperfect combustion, emitted from a furnace, must, sooner or later, descend. The injury to vegetation, as well as to health and cleanliness, are briefly noticed—indeed, it requires no theory or argument to convince us of the advantages which must attend perfect combustion, the only question being the extent of the deleterious effects from the gases produced, if such exist, so as to be injurious to the health of the community. Mr. West has, in a very comprehensive manner, described the several plans, embracing for which patents exist, twelve the term for which the patent has expired, six for which patents are in progress, four methods not protected by patent, with notice of Oran's and other fuel. It is impossible for us to follow these several plans in detail, and, therefore, confine ourselves to those which are the most important. The patents of Chanter and Co., to which we directed notice in our last Number, appear to have elicited much attention; as also those of C. W. Williams's, S. Hall's, and Rodda's. With respect to the former, it appears that several patents have been taken out, having for their object the security from accident from construction of the boiler, the regularity of supply of steam, and economy of fuel. The reports which have been submitted to us, in addition to the information conveyed in the pamphlet, satisfy us that if all has not been achieved which can be desired, yet that very rapid strides have been made towards the accomplishment of the object. The numerous testimonials submitted by Mr. Chanter at the meeting, from some of the most eminent engineers, boiler makers, brewers, and others, who have witnessed the furnace and boiler in operation, adduce strong evidence of the value of the patented principle, which, with slight modifications, is, we find, generally applicable. The description given of the furnace and construction requires a diagram to be clearly understood, as in other cases; but as we would strongly recommend to all interested in the nuisance, on the score of saving of fuel, and to those who abominate the nuisance, to possess themselves of the work itself, it is unnecessary for us to dwell at length on the minutiae of the several plans. Those of Mr. S. Hall and Mr. C. W. Williams, as also Rodda's and Iveson's, have been treated on in our columns at length, so as to render any remark here needless for. We may, however, direct attention to the report of a meeting held at Manchester within the past few days, at which the subject was treated upon very fully, and as it will form an important feature in the proceedings of the British Association, to be held in that town this month, we trust that attention being more directed to the subject, its importance will not be lost sight of, and that we may congratulate the association on the remedy or abatement of the nuisance being effected through its means, and thus demonstrate the practical usefulness of its labours. We have only to repeat, in taking our leave of the pamphlet under review, that, in our opinion, it merits, and will repay, an attentive perusal.

reputy, an attractive perfume.

*Stillman's American Journal of Science—Journal of the Franklin Institute—Philosophical Magazine—Polytechnic Journal—Repository of Arts—Newton's London Journal—Mechanics' Magazine—The Chemist—Annales des Mines—Moniteur Industriel—L'Ancre—Traité de Guyonnet—Moniteur des Chémies de fer.*

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**MANCHESTER GEOLOGICAL SOCIETY.**—At the meeting of this society, held on the 25th ult., it was announced that a crate of Silurian fossils, collected and arranged by the late J. E. Harrison, Esq., and intended by him for presentation to the society, had been received from his widow; a great variety of specimens of minerals, rocks, &c., had also been presented; variety of thanks were unanimously passed to the donors.—Mr. Binney, voted of thanks the report of the discussion which took place at the last meeting, upon the paper—"On the Temperature of the Ocean," by Robert Harkness, Esq., of Crumkirk, as noticed in the *Journal* of the 7th May. He read a further communication from that gentleman (both of which we insert for early insertion). On the conclusion of Mr. Harkness's paper, a long and interesting discussion took place; after which, the Rev. R. Walker moved, and Mr. Binney seconded, a vote of thanks to the author, for his valuable communication.

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## LORD DENMAN'S JUDGMENT ON THE "DOINGS" OF ALDERMAN THOMAS WOOD.

**PURCHASER, VENDOR, DIRECTOR, CHAIRMAN, AND TRUSTEE, OF THE TALACRE COAL AND IRON PROPERTY.**

**LIVERPOOL—FACES AND REFLECTS:** You will shortly be called upon to discharge an onerous and important duty—that of electing a representative of civic dignity for the ensuing year. It behooves you, therefore, to lose no time in satisfying yourself of the character of the individual in whom you would repose that responsible trust. Before you elect Ald. Thomas Wood, who is now on the sofa, for

**TO BE SOLD, OR LET, VALUABLE SLATE WORKS IN NORTH WALES,** within an easy distance of the sea, held for a term of which forty-six years and upwards are unexpired, subject to a royalty only, and no money rent. A considerable sum has been expended in clearings, openings, and lavelling into the mountain through which the slate vein runs, by which the existence of an inexhaustible quantity of roofing slate, and of the best quality, has been placed beyond doubt, and a very small capital will suffice to work it out. Excellent machinery, manufactured in Manchester, has also been erected on the premises, and is worked by water power. For full particulars, and to treat, apply to Messrs. Parker and Son, solicitors, Vauxhall-buildings, Gray's Inn, London.

### MEETINGS OF SCIENTIFIC BODIES.

#### IN THE ENSUING WEEK.

SOCIETY.	PLACE OF MEETING.	DAY.	HOURS.
Royal Asiatic	14, Grafton-street	Saturday	2 P.M.
Geological	17, Old Bond-street	Monday	8 P.M.
Linnean	21, Grafton-street	Tuesday	8 P.M.
Northcote	31, Regent-street	Tuesday	2 P.M.
Civil Engineers	25, Great George-street	Tuesday	8 P.M.
Medical-Botanical	22, Back-lane	Wednesday	8 P.M.
Royal	Somerset House	Thursday	8 P.M.
Antiquaries	Somerset House	Thursday	8 P.M.
R. Society of Literature	St. Martin's place	Thursday	8 P.M.
Royal Astronomical	Somerset House	Friday	8 P.M.
Royal Institution	Albemarle-street	Friday	8 P.M.
Mathematical	Cragin-street, Spitalfields	Saturday	8 P.M.

### PUBLIC COMPANIES.

#### MEETINGS.

COMPANY.	PLACE OF MEETING.	DAY.	HOURS.
Stockton and Hartlepool Rwy.	Station, Stockton	June 4	12
Royal Polytechnic Institution	Cavendish square	4	1
Bank of Australia	7, Moorgate street	4	2
Grand Union Canal	29, Battery-street, Strand	4	11
Reading and Gosport Canal Navigation Co.	Law Institution, Chancery-lane	4	2
London Railway and Dock Co.	London Tavern	4	11
Tregent Mining Company	6, St. Mildred's-court	7	1
Grand Junction Canal	Crown and Anchor Tavern	7	13
Bank of British North America	7, St. Helen's place	7	12
Mexican and South American Co.	9, New Broad-street	8	1
Bedford Consolidated Mining Co.	41, Finsbury-square	9	2
South Consolidated Mining Co.	25, Abchurch-lane	10	13
West West Joint Mining Co.	27, Abchurch-lane	14	1
Colindale Mining Co.	27, Abchurch-lane	14	1
Donnerdale Mining Co.	25, Birchin-lane	21	13
Commercial Steam Packet Co.	London Tavern	July 1	12

#### CALLS.

Tindroft Mining Company	15th, June 21	Bagle, Banbury, and Co.
London and Birmingham Rwy.	16th, July 17	As former calls.
Cumbrian Iron and Steel Co.	21st, August 7	London Joint-Stock Bank.

#### DIVIDENDS.

Anglo-Mexican Mint Co.	17th, per share 9, New Broad-street	June 1.
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### NOTICES TO CORRESPONDENTS.

**ALDERMAN THOMAS WOOD—TALACRE COAL AND IRON COMPANY.**—A few complete sets of those Numbers of the *Mining Journal* which contain the various charges substantiated against Alderman Thomas Wood, have been made up, and can be obtained on application at the office.

**BUSINESS MEN'S COMPANY.**—We have received several communications expressing surprise that our extracts from the correspondence should not have been more fully given of late; and, moreover, that a certain report, "resulting from inquiries instituted by the shareholders, should not have appeared. We have only to state, by way of excuse, that our time and attention have been late in being occupied with "the far side," that we have been indebted to the manager, or secretary, at the office for the transmission of the extracts. As charges have been alleged, how far founded, we know not; but that they are "one-sided," we shall take care, ere our next Number appears, to cast a glance over the correspondence and reports of the past few weeks, and, if of importance, give an abstract of the particular report referred to.

**"AN OLD MINER."**—A letter having appeared in the *West Briton* of Thursday, in which the article which appeared in our columns connected with a party unconnected with the *Journal*, we feel it only due to ourselves to state, that we never have allowed the production of another, except by way of correspondence, to be inserted. The leading articles, wherever they are in their merits or demerits, are written with "our own" Editorial pen, and we are alone responsible for them. "An Old Miner" may have met with certain journals where he could introduce his own remarks as those of the Editor—but, while others may be charged and convicted, we hold ourselves beyond censure.

**THE NEW TARIFF.**—A letter from "R. W." has been received, which will occupy the last part of three columns, and would willingly insert it this week did space allow. We value the communications of our correspondents, although his views are opposed to us, for he brings forward "figures," we will not say much as to "facts," or power of argument, but on those points we do not agree. We only wish he would moderate his matter, for he compels rather too much space. We hope, however, in reply, that one tenth the space will suffice.

**NEW TARIFF.**—We have to acknowledge the courtesy, on the part of our constant readers, the *Commercial Herald*, in forwarding us slips of the "substance of memoranda" presented by the *Commercial Herald* to Sir Robert Peel, the President of the Board of Trade, and to Mr. Gladstone, but, as we apprehend nothing more can be effected, we do not deem it necessary to give it insertion.

**MR. W.'S LETTER REACHED US** late to be attended to this week.

**RECEIVED.**—R. W.—E. Phillips—B. Donohoe—A. Donohoe—A. Donohoe—A. Donohoe—C. E. W.—A. Constant Reader—Do. Do.

**TO AUTHORS AND CORRESPONDENTS OF MINES.**—The Editor will feel much indebted to Captains, and other Agents of mines, who, at the time of the transmission of specimens of ore, labelling with the local designation of the mineral, and also the name, with the name of placing them in a collection, now being formed, having for the object the classification of the several minerals of the various districts—attach on the reverse of each additional information as can be required. Plans, or sections of mines, with particulars as to the direction and nature of the veins, with names of Agents, from whom the specimens are sent, will be highly acceptable, and will be placed in cases, for their reference, at all times. In order to be of use, the specimens must be sent from time to time, to give regularity, and to be particularly directed to the Editor of the *Journal*, with an illustrative plan, or section.

## THE MINING JOURNAL.

Railway and Commercial Gazette.

LONDON, JUNE 4, 1843.

The information received from a correspondent, on the proceedings of the ticketing at Truro last week, is such, that but for the unquestionable source from whence it is derived, we should be disposed to doubt its correctness. In giving publicity to the statement we wish it to be clearly understood that, while we do not pledge ourselves to its minute accuracy, we have every reason to believe the substance matter to be correct. It appears that on the 30th ult. the ticketing was held at Pearce's Hotel, Truro, when Mr. MICHAEL WILLIAMS presided. On several parcels of ore being submitted for sale, those of the Consolidated Mines taking the precedence, Mr. M. WILLIAMS refused to take the bidding of the Miners' Company—and why, foretold—because he would not take their bill; this objection was overcome by Mr. BARNON, who is, we believe, a director, and attended the ticketing, offering cash. —No, said Mr. MICHAEL WILLIAMS, we will neither take your bills nor your cash—in fact, so far as our ores are concerned, we will put you "out" of the market. Such was the case—the next parcels were from the "United Mines," and two were purchased by the Miners' Company, but Mr. WILLIAMS, as a smelter—although, in this instance, he took the chair as a miner (while his agents were in the room representing him as a smelter), feeling that it was necessary to "swamp" the Miners' Company, after the tariff had passed, thinks fit to declare, that, should any of the miners accept a bid from the Miners' Company, they (not the Consolidated Mines, but WILLIAMS and Co., the smelter) would not put forward an offer, and thus would withdraw from a public ticketing. The result was,

that Mr. BARNON, as representing the Miners' Company, declined making further bids for the parcels put up.

We have only a word or two to say on this. Mr. M. WILLIAMS is a smelter, purchasing at least one-fourth of the ores of this country, as well as those from Cuba and Chili. He represents the Consolidated Mines as a miner—he takes the chair at the Ticketing, and there forgetting the position in which he is placed as a miner, thinks fit to allow the smelter to give vent to his feelings. Better that ticketings were abolished than that such expositions should be made. We think that the miners will see for themselves, and, if they do not alter the system, be independent, and "act for themselves," by smelting their ores, they have only themselves to blame. This forms a pretty little appendage to the Ministerial Tariff.

The first quarterly meeting of the Dudley and Midland Geological Society will be held on the 7th inst., at the society's rooms, Dudley, when the committee will present "A Report on the Igneous Rocks and Volcanic Conglomerates of the South Staffordshire Coal-field"—thus, at the first quarterly meeting of its members, giving practical evidence of its usefulness—after partaking of a cold collation, a party will be formed for an excursion to the Rowley Hills. Thus is pleasure combined with scientific pursuits, a useful lesson taught to existing societies, and an example set to those districts which have not heretofore availed themselves of the advantages which institutions of this nature hold out, where the objects are not confined to mere detail, and to the consideration of abstract questions or theories, but are thus rendered practically useful, requiring only to be known to become popular. We hope to see societies of this nature followed up in other districts where geology forms an equally interesting and important source of inquiry as that presented in the locality to which the labours of this society are more especially directed. The inaugural address, delivered by R. I. MURCHISON, Esq., the president of the Geological Society, at the first meeting of the members, is now before us, and will be perused with interest and pleasure by all those who are acquainted with the writings of the talented author, or who feel an interest in science, and we may safely assume, that not one of our readers to whom these remarks are addressed will be found from out the pale of geological and mineralogical science. As we feel satisfied the address will find its way into general circulation, it is only necessary for us to congratulate the society on having acquired the powerful aid of one whose life and fortune may be said to be devoted to the promulgation of scientific knowledge, and whose services are by all so highly esteemed.

The proceedings of the United Hills Mining Company call for a word or two on the way in which matters are managed. The deed provides for only three directors, but as it was thought desirable to have one in Cornwall, who tendered his services gratuitously, a fourth was appointed. This gentleman, however, drew his salary of 100*l.* a year. At the meeting held this week, one of the London board (a gentleman who we believe to have been connected for many years with the undertaking) retired by rotation, but who was eligible to be re-elected. It was, on this occasion, stated that the finances of the company could not afford 400*l.* a year, and, therefore, they would instal the illegal director instead of the one retiring—the worthy London directors feeling that less than their 100*l.* per annum was not sufficient to cover their responsibility! We offer no opinion on the merits or demerits of one or other of the parties, but we hate jobs and unfair dealing.

We have in another place inserted the letter of Captain JOHN PETHERICK, the manager of the Knockmahon Mines, on which it is necessary we should offer some few observations. That gentleman denies our right to question the propriety of his conduct, and on this point we are at issue, for we hold it to be our province to make such comments as we may deem fit, at all times, on men placed in a public situation, whose conduct may be calculated to injure the community, and produce effects prejudicial to the mining interest, without regard to the individual, or his peculiar notions of "propriety." Mr. PETHERICK observes, that the "suspicious remarks" which appeared in a late Number, appended to the letter of a correspondent, renders it necessary that he should deny their correctness, and at once proceeds to say that he never "maligned the Protestants of Knockmahon and the immediate districts." Now, with the denial of the correctness of our remarks we cannot object, if his premises be correct, but if that gentleman had been more "temperate" and cool in reading the comments we made, he would find that assuming the edict or law promulgated by the worthy manager to be such as is conveyed in the words of our correspondent—we were right in stating that the only inference to be drawn was that he did "maligned the Protestants of the district," while any regulation of the nature complained of should be general, and not addressed to any one particular sect. We may observe that the anonymous writer is, of course, known to us, and we have adopted the words given in inverted commas, as those employed by Mr. PETHERICK; but should we be misinformed, and that his imperious and imperative orders were more general, then we shall be most happy to make the *corrections* honorable, by giving insertion to the exact words in which the order or regulation is couched. It is with regret we find, however, that the complaint which we make on principle, as to the situation in which Mr. PETHERICK is placed as manager of the mines, should not be confined to religion—temperance, repeal, and, for aught we know, many other subjects totally irrelevant to mining, are thrust forward by the manager, so as to create a feeling of jealousy and dissatisfaction, which is much to be regretted. We have this week received several communications, which we have not inserted, for they partake of too personal a character to suit our columns; but there can be no doubt a strong feeling exists in the district, that fair and impartial justice is not dealt out, and that the nod of the manager is to be as imperative in its command as was the cap of GULLER, in the days of WILLIAM TELL. This will not do, neither should it be sanctioned. An evidence of the feeling which this line of conduct has rendered manifest, we may refer to a satirical "poem" placed in our hands, and which we have noticed in another column, from which it is clear that the objection we raise is not either isolated or singular.

With respect to the closing paragraph of Mr. PETHERICK's letter, we think he would have acted far more wisely had he observed silence. It is not our wish to prevent any man from expressing his opinions, but we entertain certain notions of what are the duties of a manager of a mine and what are not, while we are fully sensible when they are neglected or exceeded. Mr. PETHERICK may be a Repealer, and he may advocate the sale employment of Irish labour, but in such case, to be consistent, he should return to Cornwall, and there manage a "bat," and not take Irish money for his la-

bour. We have not claimed to ourselves being anti-Repealers, therefore Mr. PETHERICK unnecessarily goes out of his way to charge us with anything so "wicked." We do "maintain" that he is paid for his services, and it is much to be regretted that he does not strictly confine himself to his duties, and not allow religion, politics, and temperance to interfere. What would any of our mine adventurers or manufacturers say, if their principal agent was not only the advocate of Chartism, but that he thought proper to write letters from the works to the Chartist delegates or committee? What if he was to interfere in Cornwall between the Churchmen and the Wesleyan? What if he were to threaten forfeiture of pay, and discharge from employment, if the miner, when off duty, visited a "kiddywink," or took his cup of ale with a friend? Let him discharge the man who, when in the hours of labour, neglects his work, or conducts himself improperly, but he must not rule with a rod of iron as "Lord of Knockmahon," and preclude the miner, after hours of work, from laying out his money in that way which he thinks best, or visiting such friends as he may think fit. We marvel greatly if the directors of the Mining Company of Ireland were to send down orders that Mr. JOHN PETHERICK should not apply his money to the national rent, or to the repeal rent—that he should lay out his money only with certain parties, and that others should be precluded from deriving the benefits arising from his patronage—whether that gentleman would not be the first to complain of the imperious and improper power assumed. Let him do unto others, then, as he would be done unto. Let Christian charity, which is taught by all creeds, lead him to its exercise, whereby he will secure to himself the good opinions of the rich—the good wishes of the poor.

The regulations proposed by the New Tariff having passed, it is only waste of words to dwell on those several points which have been so unprofitably discussed in our columns. A letter we have received from a valued correspondent, "R. W." (generally opposed to our "notions"), we are compelled to defer until next week, when we shall take leave of the subject, for we feel that, however much of interest may have attended the discussion or arguments adduced with regard to several mining districts, to others its continuance cannot be considered otherwise than irksome. We have, however, a duty to perform towards the mining interest generally, and when a case, such as that which has lately formed subject for remark comes under notice, we feel called upon to express the opinions we entertain, founded not only on our own observation but that of others, more practically acquainted with the subject. Having said thus much, we have only to observe that with the next week's *Journal* we bid the Tariff farewell, sincerely hoping that all the benefits to be derived from the proposed measure, augured by the advocates of free trade, may be found not to tend to the injury of the home miner—*non terrores*.

The judgment of Lord DENMAN, on the application of certain members of the Talacre Iron and Coal Company to strike Mr. Alderman THOMAS WOOD off the Rolls, for certain misdemeanours practised in his capacity as attorney of the court, to which were attached the offices as connected with the company of purchaser, vendor, director, chairman, and trustee, but of which the court could take no cognisance, is given in another column, and, as will be observed, the court being confined to his acts as solicitor, felt bound to discharge the rule, although Lord DENMAN thus expressed himself in delivering the judgment:—"The whole of this matter appears so suspicious, and, we must add, so incorrect, that Mr. WOOD has no right to complain of the rule being moved for by those who have suffered by following his advice at a time when he was solicitor to the company of which he himself was a member." We will say not one word in addition thereto, for pronounced from the bench that the conduct of Alderman THOMAS WOOD has been "suspicious and incorrect," we have only to ask our fellow-citizens if he is worthy to hold the high office of Lord Mayor of the City of London? It has been disgraced before, let it not be so again.

### CHEMICAL HISTORY OF PALLADIUM AND PLATINUM.

In a paper read by Dr. Kane, at the Royal Society, on the 17th ult., the author stated it to be his object, in this and in some subsequent papers, to examine specially the composition and properties of the compounds of palladium, platinum, and gold; and to ascertain how far they agree, and in what they differ, as to the laws of combination to which these compounds are subjected. Dr. Kane, in the first communication, commences with the investigation of the compounds of palladium, employing for that purpose a portion of that metal with which he was furnished by the Royal Society out of the quantity bequeathed by the late Dr. Wollaston; he describes the mode of obtaining the protochloride of palladium, and enters into analysis of the hydrated oxide, the black suboxide, and the true basic carbonate of that metal; detailing their properties, and the formulae which express their mode of composition. The chlorides of palladium form the next subject of inquiry; and the author concludes from his experiments that the loss of chlorine which the protochloride undergoes, when kept for some time in a state of fusion at a red heat, is perfectly definite; and also that the loss represents one-half of the chlorine which the salt contains. But in the double salts formed by the protochloride of palladium with the chlorides of the alkaline metals, he finds that the similarity of constitution usually occurring between the compounds of ammonium and potassium is violated. From his analysis of the oxychloride of palladium the author concludes that it is quite analogous to the ordinary oxychloride of copper. He then examines a variety of products derived from the action of a solution of caustic potash on solutions of ammonio-chlorides of potassium; their properties he finds to indicate analogies between palladium and other metals, whose laws of combination are better known. The sulphate, the ammonio-sulphate, the nitrate, and the ammonio-nitrate of palladium, and lastly, the double oxalate of palladium and ammonium, are, in like manner, subjected to examination in a detailed series of experiments. The second section of the paper relates to the compounds of platinum, and comprehends researches on the composition of the protochloride of platinum; on the action of ammonia on biniodide of platinum; and on the action of ammonia on the protochloride of platinum; in which the properties of these substances are detailed, and the formulae expressing their composition deduced.

**ZINC.**—At the Academy of Sciences, Paris, a note was read from M. G. Barruel, on the residue of the zinc of commerce treated with dilute sulphuric acid. It has been said to consist of iron, lead, and carbon; also pronounced to be an oxide of zinc; and likewise tin. It is not unalike, nor does its fracture represent homogeneity, according to M. Barruel's examination; and further, he says he has found it to be a compound of tin 38.4, lead 34.5, sulphur 3.5, with traces of iron, manganese, &c., which he did not proportionate. All his numerous experiments gave the same result.

**ATMOSPHERIC RAILWAY IN IRELAND.**—The *Dublin Mercantile Advertiser* says:—"Every arrangement has been completed with the Government and the Board of Works, preliminary to the commencement of the line between Kingstown and Dalkey, on the atmospheric system. In the course of the ensuing month the works will be in full operation; and thus the Dublin and Kingstown Railway Company will have given full facilities in the practical adoption of a system which is calculated to produce such transcendently important results upon railway communication."

**EMPLOYMENT OF FEMALES AND INFANTS IN MINES.**—On Tuesday evening, Lord Ashley, on rising to postpone the motion on this subject, of which he had previously given notice, for leave to bring in a bill to regulate regulations respecting the age and sex of persons admitted to work in mines and collieries, said that the question was one which he really thought ought to be settled as soon as possible, but after the terrible event of the previous day (the firing at the Queen), in consequence of which the right hon. baronet had lost a day, he would not press the right of precedence which had been given him the other evening.—The motion was then postponed.



## ORIGINAL CORRESPONDENCE.

## MINING IN IRELAND—KNOCKMAHON MINES.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—In addressing you on the present occasion, I wish it to be distinctly understood, that I do not, for a moment, recognise or admit your right—even in your Editorial capacity—to question the propriety of my conduct as the manager of these mines; but the censorious remarks with which you have thought proper to accompany the insertion, in your last Number, of another anonymous attack on me, under the signature of "A Small Shareholder," renders it necessary that I should distinctly deny, and ever, on the occasion referred to, or on any other, "maligned the reputations of Knockmahon and the immediate district," nor was there any mention whatever of them made at the time. You gratuitously and most unjustly assume that I did so, on the *ex parte* statement of an individual, who is not responsible to the public at least—for the truth of his assertions; but had you done me the common justice of making yourself acquainted with the circumstances of the case, before you ventured to indulge in observations calculated to seriously injure me in the estimation of my employers and friends, you would have found that the course which I pursued on the occasion referred to was not only perfectly justifiable, but rendered absolutely necessary, by the outrageous and highly reprehensible conduct of certain individuals employed in these mines, which, if not checked, would inevitably have occasioned serious disturbances in this immediate neighbourhood; and having on several previous occasions cautioned them without effect, and the subject having been brought under the notice of the magistracy at petty sessions, I was under the necessity of adopting strong precautionary measures to prevent a recurrence of such disgraceful conduct, detrimental alike to the interests of my employers and to the welfare of the community, and in doing so I carefully avoided making the slightest invidious distinction between the different creeds. The rule adopted for the above purpose was a general one, equally applicable to all employed, whether Catholic or Protestant; and, moreover, the word "Protestant" was not used—as falsely asserted by your Clerical correspondent—the object being merely to prevent the men from indulging in religious discussion and acrimonious observations, calculated to disturb the peace and harmony which at present so happily exists amongst the people employed in these mines.

With regard to your other remarks, I would only observe that I shall not be deterred from expressing my opinions on political subjects, on all fitting occasions, by your strictures—I maintain that I have as much right to be a Repealer as you have to be an anti-Repealer, and I fearlessly assert that I have never on any occasion mixed up politics with business matters.—Trusting that you will do me the justice to insert this communication in the next Number of the *Mining Journal*.

I remain, Sir, your's, &amp;c.,

Knockmahon Mines, May 25.

JOHN PETHERICK.

P.S.—The letter of "A Shareholder," in your last Number, dated "Waterford, the 19th inst.," was evidently written elsewhere, as, had it been posted there on that day it would not have reached you in time for last week's publication.

(Some remarks on this communication will be found in another column, which we regret, on account of Mr. Petherick, the interests of Ireland, and for ourselves, we should be called upon to make. Neither Ireland, nor mining in that country, will be advanced by these controversial letters, and we trust that Mr. Petherick will agree with us that enough has been said. Should he, however, wish to make any comments on the remarks which appear in our Journal of to-day, our columns are open to him, as they are, at all times, to others who may feel themselves prejudiced.)

## MINING IN IRELAND—KNOCKMAHON MINES.

TO THE SHAREHOLDERS OF THE MINING COMPANY OF IRELAND.

GENTLEMEN,—A great deal of discussion having lately taken place relative to these mines, I have waited from time to time in expectation of seeing the real discoverer of the vast treasures which have yielded you such immense profits make his appearance on the stage, but fearing, from his known diffidence of character, that he may not appear, and allow another to "walk over the course," and carry off the palm which so justly belongs to himself, and having been intimately acquainted with him for many years previously to his visiting Ireland, and entering your employ, I cannot, in justice to an old and valued friend, permit his claims thereto, and to your consideration, be passed by unnoticed; but, previously to my entering on the subject, permit me to assure you that he is perfectly unaware of my intentions, neither has he the slightest idea of my addressing you. Subsequently to Capt. Davey's quitting these mines, and about eight months previously to Capt. Petherick's arrival, you sent, in November, 1832, Capt. James Climes, from Ballydeobh Mine, as an agent to Knockmahon, then under the management of Capt. Reynolds; on Capt. Climes's arrival, finding that part of your royalty which had been worked under Capt. Davey's management to be exhausted, he began to look about other parts of your royalty on the course of the lode. His attention was drawn to that part called the "North Mine," and, on perceiving indications of copper at the shallow adit level, he recommended to the board the unwatering and clearing out the old workings, to which the board having consented, operations were immediately begun, and finished about the time of Capt. Petherick's arrival, a very short time after which the first bunch of ore was cut at the shallow adit level, which has led to the vast deposits of mineral which has put such immense profits in your pockets. The result would have been the same had Capt. Petherick never arrived, or had any other agent been appointed, so that no merit whatever can possibly be due to him for the discovery; of this undoubted fact Mr. Petherick must be well aware, as well as Capt. Climes having recommended the opening the "Stage Mine," where your steam-engine has since been erected, and which has turned out such quantities of ore; and also "Kil-dune," where the steam-whim was lately built. Capt. Petherick states in his letter, that the mine lost a considerable sum the six months previously to his arrival; this was during my friend's management, and is easily to be accounted for, taking into consideration that the old mine was worked out, or nearly so, and the expense incurred in drawing out the water from the North Mine, clearing and driving the various levels which led to such glorious results, and the discovery of treasures which have hitherto been inexhaustible, and which will, with judicious management, continue for many years. It is, therefore, evident, beyond all successful contradiction, that Capt. Petherick is not entitled to the smallest share of praise, merit, or emolument, either for the discovery of the Knockmahon Mines (as stated in Mr. Croker's letter, and which I do not claim for my friend) or for the discovery of a single gravel of ore which has been raised therein, which I do claim for my friend, although he, Mr. Petherick, has reaped every advantage therefrom, in the shape of a fine salary, fine house, and other privileges too numerous for insertion; and what advantage, it may be asked, has Capt. Climes reaped in consideration of his untiring exertions, and the invaluable discoveries he has made? He has been obliged to make his house comfortable at his own expense—has been cut 6s. 8d. per month, in order to divide 40s. per month, formerly paid to two agents for watching on Sundays, now divided between a third—and, lastly and latterly, has been compelled by Capt. Petherick to follow his "ore" as a night agent—a new scheme of Capt. Petherick's. It must be very annoying and grating to the feelings of my friend, unassuming and diffident as he is, to find the reports forwarded by Capt. Petherick to the board so full of egotism. I am happy to find "A Shareholder" has taken up this point, and made some allusion to the existence of a confederator. I trust the matter will not rest here, but that such steps will be taken by you, if not to remunerate, which I consider his due, at least to give the mining world to see that Capt. Climes's invaluable services are duly appreciated. I am fully prepared to furnish you with facts more fully detailed if occasion should require.

Andrews, May 25.

A CORNISH MINE ADVENTURER.

[As this letter is addressed to the shareholders, and not to us, we doubt not but that it will be noticed by those interested. We get blamed for our "anonymous remarks," which are said to be unsatisfactory; in the present instance they are unnecessary.]

## MINING IN IRELAND—KNOCKMAHON MINES.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I perceive Mr. John Petherick is pleased to characterize my letter, inserted in *Mining Journal* of 14th inst., as an unprovoked attack on his character. I observed that part of his conduct only which he had himself exposed in his own published letters—nothing more. The animus I laid down with reference thereto, may, or may not, be considered too severe to be acted on in his case. His blustering about want of confidence and cowardly assaults of anonymous accounts is no reply from him who

adopted "Fair Play's" communication. I therefore pass all this by, knowing that it will be rated at its true value. As I did blame him for his arrogant assumption, it might be wiser for him to learn that "blame is safer than praise," and that, if he can be saved from his friends, what he calls attacks on his character are only calculated to do him good, and his expressed wish to discontinue the discussion, I sincerely believe, to be a symptom of his returning good sense, and not any fear of his as to the results, and I hope he will yet admit that it is neither "fear or shame" that is the cause of my withholding my name from my letters. I am not so vain as to think my name can add any weight to my statements of facts, and I do not wish to make any parade of myself before the public, particularly "as all great men are content to be little." In conclusion, I would beg to add, that if you, Mr. Editor, consider Mr. Petherick has established a claim to have my name given up to him, you are perfectly at liberty to do so, and I will abide "the consequence," as I would not wish to give occasion to any one to say of me that I feared the resentment, or courted the favour, of any man or set of men.

A SHAREHOLDER IN THE MINING COMPANY OF IRELAND.

Littletown, May 25.

[We have to state that the name of our correspondent is known to us, and shall, if Mr. Petherick requires it, be furnished him. He must, however, first "establish his claim," to use our correspondent's words, to justify us in doing so. Let him prove that "A Shareholder" is wrong, and we will set him right.]

## ON WATER-WHEELS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Inasmuch as your valuable Journal is that of a *pro bono publico*, I beg to be allowed, as a plain engineer, who knows something of hydraulics, to offer my humble opinion, in connection with others, on the water-wheel power. In the first place, I must say that, hitherto, there has been no practical proof whatever been given to the public that power can be gained as 3 is to 2, but merely the absurd assertion of "A Miner" saying "he is borne out by theory." Surely some scientific gentleman as Mr. Donbarand has a right to complain "it is hard to tolerate exaltation of temper in men of superior genius and learning, but it is past endurance in men of inferior education and mediocre intellect." He ("A Miner") is an exceedingly bad mathematician, and, consequently, his false calculations and confused collocations have a strong tendency to lead some of your readers into error, for it is naturally impossible to come as near as 2 is to 5 in pumping water with a water-wheel—that is to say, 1000 gallons of water performing a revolution on a forty-foot wheel, cannot be so applied as possibly to raise 400 gallons the same height, or 20 gallons 133 fathoms high. And now, Sir, allow me to say, that your practical correspondent, Mr. Wheeler, recommends a very plain and satisfactory plan of measuring water, in No. 348 of your Journal. Let "A Miner" try his wheel by that rule, and he will find the calculation of "P. V. W.," in No. 342, to be very near the truth.

If "A Miner" possesses a common degree of candour, I am sure he will very soon publicly acknowledge that he has been led astray by misguided notions, and present his warmest gratitude to your scientific correspondent (Mr. Wheeler) for the scholarly and convincing manner in which the real power is so ably explained by him.

Swansea, May 28.

H. MENEVENSIS.

[While we admit the importance of the question at issue, we wish that our correspondents could come to a conclusion, admitting on the one side or other who is right or wrong. Without offering an opinion, it appears to us there are certain rules which should determine the point, and not render it necessary for a discussion which promises to be interminable.]

## ON WATER-WHEELS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I find your correspondent, Mr. W. Wheeler, is determined to be thought right, if possible, by those who know just as little about hydraulics as himself. In the Journal of the 14th inst. (Mr. W.) stated that the length of the crank should be deducted from the arm (in finding the power of the lever) for friction on the axle. This, I think, was fairly proved to be erroneous by the two examples given by me in the Journal of the 21st inst., wherein two wheels of equal dimensions, but having the one a four and the other a one-foot crank, showed a difference in favour of the one-foot crank over that of the four-foot crank as 5 is to 2, whereas they ought to be equal. Mr. W. also said that you could not produce an author to support my assertions; but, Sir, I have directed him where to find three, and I might have taken Smeaton, Banks, and my friend Mr. J. Phillips—the latter going even to 75 per cent.

Mr. Wheeler has not at all adverted to these facts in his letter, published in the Journal of the 28th inst., he neither attempts to contradict them nor to acknowledge their truth, but merely contents himself with saying that his (Mr. W.) calculations are superior to mine. Sir, I cannot lay claim to the title Mr. W. advises me to take, for if it belongs to him who first made an overshoot water-wheel perform 66 per cent. of the power expended, it must be awarded to some one who lived many a year before either of us, and I think that one who cannot build so good a wheel as his father, ought to have a "fool's cap," instead of being called a "wiseard," for doing so. Sir, I should like to have some further discussion on this subject, but I think if Mr. W. and I wish to benefit ourselves, or any one else, we should fairly understand each other, and if either convince the other of a truth he was not before acquainted with he should acknowledge it, and by so doing the discussion would be beneficial to each of the parties.

Mr. Wheeler "trusts that some other scientific gentlemen will come forward to affirm what your Dublin correspondent, 'O. H.,' said last week, that 35 per cent. cannot be gained with a water-wheel." Sir, but, Sir, this same scientific gentleman did not know that two-fifths was more than 35 per cent. I intended to have written more on the subject, but time will not permit me for the present.

Bickrigg, May 30.

A MINER.

[We really wish that "A Miner" could convince Mr. Wheeler and others, or that Mr. Wheeler and others would convince "A Miner," for not writing more on the subject, as time will not permit," as stated by our correspondent, is to leave the question open indefinitely as to time, while other matters require space to be afforded them. We shall readily give insertion to any practical letters, but personal remarks must be avoided.]

## THE NEW TARIFF—COBRE MINES.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—The Legislature having determined that foreign ores shall be admitted of certain produce on certain terms, and, as may be considered, for the encouragement of the smelting establishments and manufacturers of this country, I hope you will impress on the Minister the importance of having parties appointed of undoubted integrity to assay the ores, for it must be remembered that, under the absurd sliding scale adopted, 1 per cent.—that is, making them 144 instead of 15, or 194 instead of 20 per cent.—makes a difference of 11. 10s. per ton to the revenue on ores imported to this country. I do not mean to raise any argument, but merely wish to draw attention to the subject.

June 3.

P.S.—The sales from Cobre for this week amounted to 1702 tons of ore, or, in amount, 29,378*l.*; next week the sales amounted are 1231 tons, which, assuming the same average price, will give 14,736*l.*; and, again, on the 22d inst., there are 591 tons, or 7073*l.*—making in three weeks' sales 3324 tons, or 47,173*l.* No matter whether the produce be 14 or 15, 19 or 20, the sliding scale is bad, and the Minister will find it out.

[The letter of our correspondent is so comprehensive, as to require no observations—the error has been pointed out to the Minister, but certain "foreign powers" have effected their object. We repeat it.]

## TALACHE COAL AND IRON COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Having been given to understand that Mr. Wild, of Nottingham, has made a compromise with Glyn and Co. for 1000*l.* and costs in an action, and that certain other proceedings are pending against that gentleman and a Mr. Handley and Taylor, as also Mr. Chapman—who, I find by your paper, is in the Fleet—allow me to ask whether all the shareholders are liable, and how I can get rid of my liability, if any? I did not sign the deed, but I got some shares passed on me.

June 5.

J. HENDERSON.

[If our correspondent has not signed the deed we doubt whether he is liable. We would recommend him to apply to his solicitor or to Mr. A. Croft, who will advise him.]

## IMPROVEMENTS IN STEAM-ENGINES.

THOMAS WILLIAM PARKIN AND ELISHA WYLDEN'S PATENT.

(FROM A CORRESPONDENT.)

The increasing demand for steam power for the purposes of locomotion, both by sea and land, renders it a matter of the highest importance that the greatest attention should be paid to the construction of the machinery, through the medium of which this gigantic power is made to act, in order, as much as possible, to lessen the consumption of fuel, the bulk of the machine, and the ruinous wear and tear attendant upon the velocity required for railway transit. With this object in view, the patentees (who are utterly sceptical as to the practicability of the successful introduction of the rotary principle, especially since the late failure of the disc-engine on the Birmingham and Gloucester Railway) have applied themselves to the removing of the errors existing in the reciprocating-engine, the principle of which they maintain consists in the mode of admitting and educting the steam to and from the cylinder, the construction of the slide-valve, and the machinery employed to give it motion. In the first place, the admission and eduction of the steam, by means of the common slide-valve, which obtains its necessary motion by an eccentric, is defective, inasmuch as the passages to the cylinder cannot, by such means, be opened and closed at the proper periods to give full effect to the action of the steam against the piston; for instance, the eccentric is necessarily fixed in such a position that the valve can only commence opening both the steam and eduction passages when the piston has completed its stroke, and is about to return. Thus, the passages, ten inches long, of a locomotive cylinder twelve inches in diameter, are only open one-eighth of an inch at the time of the engine passing the centre, which opening is scarcely sufficient to admit of 1½ square inch of steam to pass to fill the cylinder twelve inches in diameter, and at least half an inch in length, the cylinder being one inch longer than the stroke and thickness of the piston. The steam, consequently, upon its admission, must expand in the cylinder, and great power be lost, it being evident that the steam ought, at this juncture, to fill the cylinder at the same amount of pressure as is contained in the boiler, and this loss is not compensated for by the least saving of steam, for, as the valve continues to open the passage during half the stroke, the cylinder must necessarily, at that time, be full of steam at the boiler pressure. In addition to this, another error in the eccentric motion, with consequent loss, prevents itself—viz., that as the eduction passage only opens gradually, sufficient facility is not afforded for the waste steam to escape—indeed, instead of escaping freely, as ought to be the case, the piston (which is only moved at the commencement of its stroke by steam considerably lower than boiler pressure) is compelled to drive it out, and, as the passages commence closing at half-stroke, the piston, after having done so, has to contend against the atmospheric air necessarily compressed in the cylinder.

In the next place, the construction of the slide valve is also defective. For a cylinder twelve inches in diameter, with passages ten inches wide, a valve of twelve by seven is required—consequently, there is a surface of eighty-four square inches exposed to the pressure of the steam, which, if taken at 60 lbs. (the average pressure on railways), throws a weight of no less than 5040 upon the valve, which has to be moved three inches backwards and forwards every revolution of the engine. The loss sustained, both by friction and the consequent wear and tear in this part of the machinery, is too obvious to require comment—in fact, the inventors cannot but believe that all engineers will admit the existence of the evil, as they trust they will also appreciate the remedy. The patentees have succeeded in constructing a slide-valve, which, at no part of the stroke, will have to sustain a greater pressure than about 440 lbs.,\* instead of 5040, the machinery giving motion thereto being so arranged, that the steam and eduction passages will be both completely open at the time of the engine passing its centre, thereby allowing the steam to fill the cylinder at this juncture at boiler pressure, without its having, in the slightest degree, to contend with the waste steam, as the eduction passage remains open during nearly the whole of the stroke, whilst the steam passage is closed at any part of it that may be deemed advisable, according to the work the engine is performing at the time. That a great saving of fuel is effected by working steam expansively, has long since been proved to the inventors by practical experience, and they maintain that the principle of expansion will be found much more advantageous upon their plan than upon any other within their knowledge, because, when the full impetus is given to the piston, at the moment of its passing the centre, less steam afterwards required to complete the stroke than when it is by the eccentric motion only gradually admitted on the centre, and then allowed to fill the cylinder at boiler pressure, and afterwards gradually cut off.

## LECTURES ON GEOLOGY.

WITH THEORETICAL INFERENCES AND PRACTICAL APPLICATIONS.

BY PROF. J. PHILLIPS, F.R.S., &amp;c., &amp;c.

LECTURE 2.—This lecture was illustrated by coloured diagrams and sections of the Cambrian strata, the Isle of Wight, Mount Vesuvius during an eruption, &c.—Mr. Phillips, in commencing his lecture, said, that in the first lecture he had purposely left out of consideration the first condition to which we could trace the materials of the stratified rocks—an interesting point, because referring to a question beyond all doubt the most difficult one regarding geology. After referring to Lyell and others for the most correct view of this question, he said that, if we examined the constitution of the sandstones with care, we should find them chiefly composed of three minerals—quartz, felspar, and mica. A specimen of granite, which he exhibited, he said he should prove had been produced by the action of heat, while sandstones were deposited by the action of water; that both were similar in their constituents; but the felspar and mica in the granite were perfectly crystallized, while in the sandstone there were fragments of pebbles of felspar, quartz, and mica. These granite rocks were broken up, and their parts separated by processes which were in action at this day; and the action of water collected the materials, and made sandstones of them. Many supposed that Waterbury bridge would fall one day by the perishing of the granite of which it was composed, but he hoped not.—The lecturer again pointed out the detached and peculiar position of the unstratified rocks, the granite being coloured bright red, and the basaltic bright green, in the maps; and by sections he showed their different superposition from that of stratified rocks. He also pointed to the rocks resulting from direct igneous action, as that of volcanoes, in various districts, with stratified rocks produced around these volcanic accumulations, by the action of water. In illustration of these portions of his lecture, he exhibited sections of the district about Naples, and of the Castle Hill, Edinburgh—the latter itself being upon a mass of basaltic rock, in most striking contrast to the stratified rocks in contact with it. He adverted to the porphyritic rocks in the Vale of St. John, in a case in Cornwall, where the granite shot out veins into the midst of the slaty rocks; to Glen Tilt, in Scotland, where a mass of granite cut off hills strings into the midst of the limestone and slaty rocks; and observed that similar instances were very numerous. The igneous rocks, lying under stratified masses, had their veins and dykes running off into the strata and schists. The conclusion was, that the unstratified rocks had probably the same origin as the volcanic rocks they resemble. As to their constitution, hardly any unstratified rocks but combined distinct crystals of felspar, having the characters of the crystals produced by modern volcanoes. A specimen he showed from Ben Nevis was full of the crystals of felspar. Unstratified rocks also contained crystals of hornblende, in some of its forms (which had obtained for it three names), and so did modern volcanoes. He showed a piece of modern lava full of cells, and a piece of trap-rock—one of the unstratified rocks. The difference between these was, that whereas the extrusion of the gases left cells or cavities in the modern lava, which a subsequent process in Nature filled with other minerals, that lava would have been trap-rock or amygdaloid, if the cells had been empty. These and similar facts led some geologists to imagine, that the principal cause of difference between the ancient unstratified rocks and those of modern volcanic production was due to the circumstances of the greater part of the former being produced deep in the earth, thereby solidifying them, and making them more compact. Amongst other instances in proof of these rocks being produced in the lower parts of the earth, he showed a drawing of a district in the island of Arran, where the granite was placed side by side with the slaty rocks in that island, and veins ran from the granite into the cracks of the slaty rocks—and sometimes they were penetrated with injections really as fine as those seen in preparations for surgical purposes. When the granite entered the cracks in the slaty rocks, it cooled more quickly, and became consequently a fine-grained rock, that not one grain in fifty could be recognized as granite. It was in fact a porphyry, differing in texture from granite, but in the essence of its grain; and in this state porphyry was often found running in dykes and veins through other rocks. The conclusion, on analysis, would confirm the identity of granite and porphyry, or, for as regarded their constituents. If a piece of porphyry was melted and allowed to cool slowly, it would show more crystallization than it did naturally; so that, although the appearance of these unstratified rocks was volcanic, still

\* When nearly the whole of the pressure of steam is removed from the top of this slide-valve, a sliding one may be used to the greatest advantage, thereby saving nearly the whole of the steam wastes every stroke in the passages (both the steam and eduction).



their origin might be very much the same. His supposed it highly probable, that those rocks, which resembled the products of volcanic action in the manner of their formation, their appearance, and constitution, and the series of textures they exhibit, were wholly of igneous origin. We might next inquire, whether they manifest themselves at the surface under such circumstances as to lead us to infer such origin. If heat were applied to sandstone or to clay it would be greatly hardened and solidified; but if limestone were heated in a place where no air could escape from it (for half its weight was carbonic acid gas), it melted, and assumed a crystalline appearance like that of statuary marble. He noticed the effects of the contact of green limestone and sandstone in Salisbury Crags (Arthur's Seat), Edinburgh, by which the sandstone was so much affected that it might be polished for Jasper. Mr. Henslow had described some years ago a mass of basaltic rock on the shores of the Menai, which came in contact with certain argillaceous strata, and hardened them to a great degree. One of the effects of great and mingled heat was to produce crystallization in many substances; and in the shales in which he referred crystals were produced, some of granite, and others of garnet. He referred to other instances between Borrowdale and Skyehead, in Cumberland; on the site of an ancient volcano, on the Rhine; and in the valley of the Tere. In contact with the lowest of the stratified rocks, which might be supposed to be nearest to the source of heat, the sandstone was hardened to quartz rock, and clay to slate; and, instead of the laminations being found horizontal, in consequence of the disturbance caused by the lower rock pushing its way upwards, the slates might be split in a vertical direction. Near Newcastle-on-Tyne there was a dyke of basaltic rock, twenty-four feet wide, which went through the strata of the coal formation (which consisted of sandstones and shales). Great masses of granite were generally found lying at the base of all the strata in the countries where granite was found, and yet it was commonly found just below, or on one side of, the principal elevation of mountains; hence it might be inferred, that, by some powerful action or agency, these masses of granite had been pushed up from below; and he would call attention to numerous cases in which the stratified rocks had been broken by being uplifted, to make way for the granite thus forced upwards. He then enumerated various "faults" or dislocations in the stratified rocks, amongst others to one in a valley near Hereford, mentioned by Murchison, in his *Silurian System*; a line of cliff in the South Wales coal field, near Brecon, where there was a fault of 700 feet; one in the South Wales coal field, of 1200 feet, and another of 700 feet (also taken from Murchison); a case in the sandstone and blue clay of Dorset; another north of Newcastle-on-Tyne, in which the dislocation formed a line, along one side of which was the magnesian limestone, and on the other were worked the coal formations of Newcastle; and this, which was commonly called the "slippy fathom dyke" (340 feet), was, in fact, much more probably 700 or 800 feet. But a dislocation of far more importance occurred in another district. The mountainous country of Leinster consists of a series of sandstones and limestones resting upon slaty rocks, upon which stood the village of Lagintra; a little south of which coal was worked. The dislocation there was about 3000 feet at the least, ranging on to Brough, to Brumpton, near Carlisle, and so on till it joined that very dislocation near Newcastle—a course of 110 miles, along which the strata were broken in that extraordinary degree; by which we might judge of the force that occasioned it. Almost every district was full of dislocations, which even forced the sandstone into a vertical position; which, of course, could not have been produced before the sand was solidified, as it could not be deposited at a greater angle than thirty or forty degrees. In Alum Bay, Isle of Wight, strata were found of petrified wood, heaps of pebbles, and layers of shells, for 1100 feet of thickness, all perfectly vertical, so that a blow of the hammer would bring down a shower of gravel and shells. Brongniart had stated his opinion, that hardly a square mile of the earth's surface was free from these dislocations. The lecturer showed a drawing, communicated by Mr. Griffin, of some strata in Ireland, which by a dislocation had been twisted about in a most surprising manner; and one made by himself of strata, at the upper end of the lake of the Four Cantons, Switzerland, where the limestone rocks were twisted from top to bottom. There were similar effects visible in the neighbourhood of the lake of Chamouni, and other Swiss lakes. These dislocations of the strata, caused by some movement of the crust of the earth, had not by any means taken place at one time; they were not the effect of one or even of a few mighty convulsions, but were many of them completed before the formation of many of the strata had begun, and afterwards those strata had been formed and subsequently displaced. He cited various instances to show, that stratified rocks had been broken up by the action of some force from below, which, in many cases, had been connected with the exhibition of igneous rocks; but earthquakes affected a wider district than volcanoes, as these disturbances sometimes extended much beyond the igneous rocks themselves; and, therefore, probably the exhibition of the igneous rocks was not (as some geologists described it) the cause of these dislocations, which rather resulted from some fracture of the crust of the earth dependent on some general cause. There was no peculiar force in the trap or granite rocks; but these were forced and squeezed upwards by the earth's crust being broken. But for these convulsions, and the elevation of the igneous rocks, we should have known nothing of their existence, and the history of the globe would have been involved in the greatest obscurity and error; but these effects had revealed the constitution of the parts of the earth below the surface, and carried back the history of the stratified rocks one step further. In conclusion, the lecturer announced, that his next lecture would commence the subject of the succession of organic life on the globe; and, with reference to the two geological theories as to the general construction and changes of the crust of the earth, he referred his hearers to Mr. Lyell's work as the most powerful argument on "one side," and to those of Professor Sedgwick and himself on the other; and a little examination of these works would probably render his observations and arguments more satisfactory.

(To be continued in our next.)

#### PROF. VIGNOLEN'S LECTURES ON CIVIL ENGINEERING, WITH PRACTICAL ILLUSTRATIONS.

LECTURE 7.—This lecture was devoted to the consideration of curves upon railways, and Mr. Vignoles pointed out the principles on which should be compared the economy and advantages to be obtained by the adoption of curves, with the inconveniences attending on them; the saving of expense in formation, earthwork, bridging, &c., by curving round natural obstacles; the advantage of obtaining a more level line, avoiding interference with valuable property, or approaching towns, mineral or manufacturing establishments, &c., all entering into the former—the practical inconveniences of additional resistance to motion and retardation of velocity in curves safety being the set-off; and, among other elements, it was stated that the breadth or gauge of the railway affected the calculation. The Professor then showed that along very wide valleys, through champagne countries, and where the ground undulated, so that the ridges, dividing the water-courses, were successively crossed by the railway at right angles to their general direction, the saving by lateral deviation would seldom be material, and, consequently, that the curves may be laid out so flat as to be practically equivalent to straight lines—the "accouche de ferrou," as it was a French phrase, being, in such districts, to be overcome by cutting and filling, to the extent justified by the importance of the line and traffic, or by the introduction of calculating gradients, somewhat approximating to the natural surface of the country. But, in tracing a line of railway along the sides of hills, bounding narrow valleys, particularly where the main valley is broken by lateral rivers, then the economy from curving becomes very great, and the introduction of curves to the greatest possible extent, consistent with safety, is allowable. Mr. Vignoles then went on to consider the various means employed to obviate the practical inconveniences arising from curves on railways. He began by explaining the peculiar disturbance in make between carriages, wheels and rails constructed for running on railways and those for common roads—in the former, the wheel being kept fast to the axle, and both moving round together—in the latter, the axle being fixed to the carriages, the wheels only moving round. Many attempts had been made by engineers to give the railway vehicle the advantage which the road carriage had of turning with facility and safety round sharp bends, but in vain, as the wheels always got off the rails laterally, at even moderate velocities; it was only on the old horse-drawn roads that the wheels were loose on the axles. Railway wheels being thus fixed to the axles, have the tendency to move on a straight line, as that on the circumference of a curve the axle is obliged to continue in a straight line, the wheels are only kept upon the rails by the flanges pressing against the inside edge of the outer rail of the curve. The Professor then entered into a number of technical details, which he illustrated by the class by diagrams, explaining why the danger of the wheel had now, by common consent, been placed on the inner side of the periphery of the wheel rather than on the outer side; and also the reason for allowing a certain amount of play, being the difference between the gauge of the rails and the gauge of the wheels, and the manner and extent why the rim of the railway wheel is made somewhat conical—that is, the wheel, instead of being quite cylindrical, is really the frustum of a cone, standing, at the same time, the rails for giving the proper "cone" to the wheel, being dependent on the minimum radius of curvature on the line to be travelled over, and the maximum velocity. In general, the "cone" was stated to be about one-fourth of the breadth of the rim of the flange, giving about one inch for the difference of diameter of the wheels at their inner and outer edges, the wheel carriages are passing round a curve, the wheel and axle, being connected, roll together as a rigid body, and require no construction of the "play" and the "cone" to prevent too much lateral motion of the flange, and to get the wheel round the curve without dragging. Mr. Vignoles then showed that on the ordinary railway gauge of 4 ft. 8½ in., and in the 5 ft. 6 in. gauge, the above amount of cone and play would be sufficient to meet a curve of only 100 yards radius, which is greater than any which ought to be laid down on a travelling line for high

speeds. The centrifugal force due to the velocity of the carriage was next to be considered. As before stated, its tendency in moving round a curve is to keep a tangential course; this force may be accurately computed (being dependent on the velocity of motion, weight of the carriage, and the radius of curvature) by well-known formulae, whence is deduced the fractional part of the weight of the carriage, representing the centrifugal force. The Professor gave the formula, and worked it out on a supposed velocity of something more than 17 miles per hour, or about 30½ feet per second, on a curve of 200 yards radius, whence the centrifugal force was found to be 1.26th of the weight of the carriage. Mr. Vignoles quoted the following rules—viz., "multiply the square of velocity in feet per second by the gauge of the railway, and divide the product by the accelerating force of gravity, multiplied by the radius of curvature in feet," which gave an expression, which, though not the fraction of the weight, was what would do very well for practical and ordinary purposes; it was the height which the outer rail of the way should be elevated, to counteract the centrifugal force, and prevent the wheel flying off at a tangent to the curve. He then stated M. de Pambour's more strictly mathematical, but more complicated, rule for obtaining the same amount of elevation of the outer rail, and showed the table of results calculated by that engineer and by Mr. Wood, of which we give only the extremes, by which it appears that, supposing it safe to encounter so sharp a curve as one of 250 feet radius, at the rate of thirty miles an hour, the outer rail of the way must be elevated twelve inches; but, for a radius of 5000 feet, or nearly a mile, at the rate of ten miles per hour, the requisite elevation is only 1.16th of an inch. Having elevated the outer rail, the axle of the carriage, resting on the two rails, gets such an inclination as will produce on the load a gravitating force inwards equal to the centrifugal force outwards; and there will neither be any tendency in the carriage to upset or to press the flanges of the wheels against the rails. The rails once laid, if the carriages are slower than the calculated rate, the centrifugal force is overbalanced by gravitation, and the flanges of the wheel press the inside rails; if quicker, the contrary effect takes place, and the flanges press against the outer rails, so that some medium rate of travelling must be fixed on; and, as the slow trains are in general most heavily laden, any increase of friction has a more powerful effect of retardation than will occur to lighter loads moving at greater speed. Mr. Wood, therefore, advises that the outer rail should not be elevated more than will compensate the centrifugal force produced at the slower rate of motion with heavy loads. Mr. Vignoles then forcibly illustrated the practical effects of neglecting these rules. He then entered on the subject of laying out curves on the ground, by a succession of set-offs at the end of each length of any given measure—the set-off being calculated from the radius of curvature, considering the given measure (any chain length) as the side of a circumscribing polygon; and, on the large scale, and practically, a number of these sides of a polygon become the segment of a circle. Mr. Vignoles gave a simple approximate rule for finding the set-off from the radius, or the reverse, by "divide the number 792 (the number of inches in a chain) by the radius in chains—the quotient is the set-off per inch in inches." Thus, the set-off per chain for a curve of a mile radius is 99, or, in round numbers, 10 inches. When the curve is of less than one mile radius, it is advisable to make the set-off by half-chains. It was observed incidentally by the Professor, from the same rule, the set-off due to the curvature of the earth was, in round numbers, about eight inches per mile, and hence had arisen formerly some curious engineering mistakes, from supposing that a horizontal line was a tangent to the earth's surface; and, in setting out canals, an inclination of eight inches per mile had more than once been given to the water line, while it was imagined it had been laid out for a dead level. In conclusion, Mr. Vignoles mentioned that some further observations on curves would occupy the next lecture.

#### PROCEEDINGS OF PUBLIC COMPANIES.

##### EAST TRETOIL MINING COMPANY.

The annual general meeting of the proprietors of the above company was held at their office, St. Mildred's-court, on Tuesday, the 21st inst.

G. H. HEPPEL, Esq., in the chair.

The minutes of the last meeting, as well as those of the joint meeting of the Tretoil and East Tretoil companies, were read and confirmed.

The CHAIRMAN then read the following directors' REPORT.

In pursuance of the resolution of the joint meeting of shareholders in this and the Tretoil Company, held in the month of February last, the directors caused all the works in the East Tretoil Mine to be suspended at the end of that month, and, consequently, have now nothing to add relative to the prospects and condition of the mine to the statements then laid before the shareholders, but venture to repeat the advice so frequently given—that the best interest of the shareholders will be most effectually promoted and secured by working the two mines together under one management. Under the above conviction, and the authority vested in them by the resolutions of the meeting, the directors have taken such preliminary steps for working the mines jointly as have been deemed most expedient.

With a view to working the two sets together, it will be necessary, at the joint expense, to sink a new and permanent engine-shaft on the boundary between the two mines, and eventually to erect an engine of sufficient power to drain both sets to an adequate depth, which it is estimated cannot properly be done by an engine of less than 50-horse power; but as the performance of these works will require a considerable period of time, and as the directors deem it of great importance—in the company to get this mine in a productive condition with as little delay as possible, they have made arrangements for immediately driving the thirty fathom level in Tretoil into this set, and, to enable them to effect this object, they have caused a new winn-shaft to be sunk in the Tretoil Mine, near to the boundary of the set, and it is now down to the thirty fathom level, and is intended to be continued to the forty, fifty, and sixty fathom levels, each of which may be further driven into the East Tretoil ground, and the ore and the other stuff brought to the surface through the shaft. As there will necessarily be a greater influx of water from continuing the level into this mine, and as the engine now in use in Tretoil is not of sufficient power to keep down the water arising from the increased working in that mine to a greater depth than the forty fathom level, it is intended, by way of assistance to that engine, to work pumps in the new winn-shaft, by means of flat rods, from the engine belonging to this company, and the two together will be sufficient to keep down the water in both mines, until the new engine-shaft shall have been sunk to a proper depth, and the new engine erected.

It is a fact of great importance, that in sinking the new winn-shaft in Tretoil, which is near the boundary of this set, the level below the thirty fathom level has been found to be twenty inches in width, and very good tripping ground—thus affording the strongest presumption that it will prove productive in this mine. At the end of the month of February, when the works were stopped, there was due at the mine about the sum of £100—available assets in the hands of the directors not amounting to more than the sum of £145, 10s. 3d.—it became necessary for them immediately to call on the shareholders for a further sum of 45s. per share, and the same was accordingly paid on about 2179 shares, and the debts, which are in a course of liquidation, have been reduced to about the sum of £201—leaving the residue of the money so received applicable to the payment of the creditors, the operations about to be immediately commenced, and the joint expense of the new engine and engine shaft; but whether the directors may again have recourse to the shareholders or not for further contributions towards the expense of trying this mine, will depend in the first place upon the value of the discovery which shall be made in the hole when the level shall have been driven into this mine; and, in the next place, upon the determination of the shareholders in respect of carrying into effect the conditions passed at the joint meeting of shareholders held in February last, for the consolidation of this company with Tretoil.

The directors have deemed it necessary to sign a declaration, of forfeiture of all shares on which any call remains unpaid. It will, however, be for the meeting to decide whether the parties holding such forfeited shares be at liberty to have them restored on such terms as the meeting may think fit to impose, or whether the forfeiture shall be confirmed. The directors have, to the best of their ability, followed out the resolutions of the joint meeting of shareholders for the consolidation of this and the Tretoil Company, by inviting each of the shareholders as did not attend that meeting to sign the resolutions, and they have been accordingly signed by twenty-eight persons, the holders of 1801 shares in Tretoil, and twenty-two persons, holders of 2141 in this company, twenty-two of whom are shareholders in both companies. In conclusion, the directors are so anxious to deviate from the common bottom statement, and trust that the shareholders will cordially co-operate in carrying out the plan suggested for the consolidation of the two companies, as the great advantage of working the two mines together is clearly apparent, and quite indubitable. According to the regulations of the company, two of the directors go out of office this day by lot, which has fallen on Messrs. HeppeL and Chappelow, but they are eligible for re-election, and are willing again to serve the company, if it should so please the shareholders.

Mr. WHITE wished to know if any formidable opposition existed to the consolidation of the two companies?—Mr. LAURENCE stated that he certainly objected to the terms proposed.—A long discussion then ensued, in the course of which the latter gentleman proposed that two indifferent persons should be appointed to decide upon the relative value of the two mines, so as to settle what proportion of East Tretoil shares should be given for the Tretoil shares, and also that the Tretoil Company should work to the boundary of the East Tretoil and Tretoil sets, to see what description of ore ground was to be found in the East Tretoil set, before the proprietors of the latter should be called upon to pay any share of the expense incurred in sinking an engine-shaft, which it was proposed should be done at the joint expense of the two companies. On the other hand, the directors objected to Mr. LAURENCE's proposal, on the grounds that the majority of the proprietors had signed the terms of agreement as proposed at the joint meeting of the shareholders of the two mines, Mr. LAURENCE, with one or two very small shareholders, being the only dissentients in the two companies, and, if his proposal were agreed to, those signatures that had been procured at the meeting attended to would be of no avail, and all the work would have to be done over again. To the second part of the proposed the directors objected, because, as they stated, it was not fair that the Tretoil proprietors should have all the expense of proving the East Tretoil set, but that as the Tretoil works were now conducted by so doing both companies ought equally to share the expense of that investigation.

In the course of the discussion, Mr. LAURENCE stated, that although Capt. Mouson had given a very good account of the prospects of the Tretoil Mine, at the joint meeting of the proprietors of the two companies, he had since stated to him that he was mistaken in what he had put forward.—The CHAIRMAN said that the directors had heard nothing of that change of

opinion, and it was determined by the meeting that Mr. Mouson should be written to on the subject, so that the matter might be settled, for if he had deceived the proprietors he was a very unfit person to manage the company's mines.

The forfeiture by the directors of all shares upon which the last call of 45s. per share had not been paid was then unanimously confirmed. The report was also unanimously adopted.—The CHAIRMAN then put a resolution submitted with the management of the mines, which was carried with a slight opposition.

The thanks of the meeting were then voted to the chairman and directors, and the meeting adjourned.

In the course of the proceedings Mr. WHITE, sen., brought a charge against Mr. Mount, one of the directors, of having so trafficked in the shares of the company that it was impossible to ascertain their real value, and that if he held a large interest in the company he should certainly move that gentleman be removed from the direction.—The CHAIRMAN replied that he could not defend Mr. Mount, nor could he say anything further about the matter, as Mr. Mount was not present.

##### UNITED HILLS MINING COMPANY.

The annual general meeting of the proprietors of the above company was held at the office, 5, Adam's-court, Old Broad-street, on Thursday, 24 inst. ROBERT CLARKE, Esq., in the chair.

The SECRETARY having read the advertisement convening the meeting, next proceeded to read the agent's report, which, after informing the proprietors of the appearance of the different levels, stated that Turton's engine would soon be stopped, which would save 70s. per month. The value of the materials had been added to the extent of above 900s. It also stated that the fall in the standard of copper ore, for the last four months, had reduced the receipts of the mine above 250s. per month.—The directors' report was then read, as follows:—

REPORT.—The directors place on the table, for the information of the proprietors, the account for the past twelve months, ending 20th April last, showing the net profit made for the year to have been 2767, 6s. 4d. To this is added a supplementary account, made up to the day of the meeting, whereby the balance of assets now in form of the company is 400, 0s. 0d. The report of the mining captain and agent, which has just been read, will, it is hoped, be found generally satisfactory—at the same time, the directors have to regret that, as yet, the expenses have not been diminished to the extent hoped for last year, owing to its having been found necessary to keep the old engine at work, not only to draw off the water, which proved in winter stronger than was expected, but also to supply the crusher; however, in about three months, a communication at the fifty fathom level, between Tamer and the diagonal shaft, will be opened, which will supersede the employment of the old engine for the purpose of drainage, and, at the same time, enable some of the old engine to be set in that part of the mine which is known to yield good copper. It has been considered desirable to erect a new crushing machine, of sufficient power (and turned by a stream, which is let to the company) to enable them to work to the barrens, and to more advantageously crush the other ores. Although the outlay has been considerable, and has had the effect, in addition to the reduction of price of copper, and the failure of Messrs. Whitworth's, who had a balance of 60s. in their hands, of deferring a dividend, which the directors had hoped to have been enabled to have announced to you, yet, as that outlay will, in twelve months, be reimbursed by the dressing of those barrens, which otherwise could not have been calculated upon, the directors trust this expenditure will be found to be beneficial to the future working of the mine, and to secure to it a large profit from this time forward.

The CHAIRMAN stated that Mr. Garland was in the room, and would answer any questions proposed by the proprietors. He regretted the satisfactory accounts made last year had not been fulfilled, but there had been two reasons for their non-fulfilment; in the first place the water, and in the second the fall in the price of copper.—In reply to Mr. ALBERT, the CHAIRMAN stated that the average tribute was from 2s. to 2s. 6d.—it varied from 3s. to 12s. There was no hope of reducing the expenses at the mine to any great extent.

A conversation then ensued, as to the expediency of having the accounts of the company removed to a joint-stock bank, so as to receive the interest of 3 per cent. allowed in those establishments, but the matter was ultimately left to the consideration of the directors.—It was then moved, seconded, and carried unanimously.—That the report be received.—Mr. TYAS then stated, that, as Mr. Campbell retired from the direction by rotation, he could not see why Mr. Michael Williams should not, as he was constantly busied with and forwards between London and Cornwall, act as the London director, and thus save 100s. per annum to the company. He therefore moved—

That Mr. Michael Williams be a town director in place of Mr. D. Campbell, and that the office of country director be not filled up.—Mr. CAMPBELL explained to explain, that, some time since, he having business of his own to manage, offered, if it succeeded, to give up his place in the direction, as he would not have been able to have managed both, but, that business not having succeeded, he was ready to perform the duties of director. He left himself at the hands of the proprietors.—A long and tedious discussion ensued, during which it was stated by Mr. ALBERT, that Mr. Michael Williams was elected a country director merely to give him power over the persons employed in Cornwall, and that it was understood by the meeting at which the appointment was made that his services were to have been gratuitous, he having declined to take any salary, yet it appeared that he had drawn his 100s. per annum as a director. He also objected to the reduction in number of the directors, he feeling assured that two was an improper number, as there could be no vote; and, besides, in case of either being ill, it would be inconvenient for drawing the cheques, and transacting the other business of the company. He therefore moved, as an amendment.—That the salary of the directors be reduced to 500s. per annum, to be divided amongst the directors as they might think fit, but no second being found, the original motion was put, and carried.—Mr. FAIR was then unanimously re-elected an auditor, and Mr. HENSON was also elected an auditor.—The CHAIRMAN, in a very complimentary speech, moved the thanks of the proprietors to Mr. DAWSON CAMPBELL, for his able services to the company while in the capacity of a director, which, being seconded, was carried unanimously.—After a little private business was transacted, the thanks of the meeting were voted to the chairman.

##### TREGOLLAN MINING COMPANY.

The annual meeting of the above company was held at the office, St. Mildred's-court, on Saturday, the 26th ult., when the directors' report was read, which stated that a very small monthly outlay over and above the profit would be required to bring the mine into a profitable condition. The ore raised and sold during the past year had produced about the sum of 2045s. per month, at an average price of about 4s. 10s. per ton, making the total produce for the year about 24500s.; while the cost had amounted to 4200s. The debts, at the end of last year, amounted to the sum of 740s. or thereabouts, of the assets 665s.; and the present amount of debt, including the estimated amount of May cost is about 1230s., to meet which, assets, including the portion of the last call remaining unpaid, the money due for ore sold, and ore at surface, will amount to about the sum of 1050s., independent of the machinery, materials, and other property on the mine, the estimated value of which is about 1400s., being an increase on the valuation of last year.—The meeting then adjourned.

##### CORNUBIAN MINING COMPANY.

At the annual general meeting of the proprietors of the above company, held on the 31st ult., at the office, 44, Finsbury-square, the report of the directors was read, which stated that the purchase from the former proprietors, of the mine materials, had been completed for 1500s., and the land had been agreed to grant a new lease for twenty-one years at reduced rates. The expenses of placing the mine in working order had greatly exceeded the estimates, which was caused by the manner in which the mine had been formerly worked, so care having been taken to secure the different levels of timber, which had led to very extensive dilapidations, the replacement of which was of a costly nature. Every particle of ore visible had been taken for the mine, and the company had had to pay 200s., in two months, to put the mine in fair working order.—The report was, after a short conversation, adopted, and the meeting adjourned.

JOINT-STOCK BANKS IN ENGLAND.—A Parliamentary return was published early in 1849 relative to those establishments, from which it appeared that the number of joint-stock banks in England on the 1st of January, 1849, was 109, a considerable proportion of which had been introduced within the preceding ten years. The number of partners in the banks varies from 30 to 1200, and may average about 300. There is half a dozen with less than fifty partners, the smallest number being 30. Fifty-eight of the banks have branches, and fifty have none. The branches, including the parent bank, are from two to sixty-seven in number. There are eight banks which have more than twenty branches. The whole number of parent banks and branches is 618. There are, besides, about 330 private banks in England—that is, banks having not more than six partners. Adding these to the joint-stock banks and their branches, the whole number of banking establishments will be about 1200.

PHOSPHORIC ACID.—In the report of the Royal Agricultural Society of England, just published, it is stated that Dr. Daubeny, of Oxford, has undertaken a journey to Estremadura, in Spain, for the purpose of ascertaining the circumstances and extent of the geological formation of siliceous or phosphoric, or native phosphoric of lime, which is found in the province and elsewhere also, and which is expected to prove of great value in agriculture, as a substitute for the earthy part of bone manure, with it greatly resembles in its chemical composition. A quantity of this phosphate was imported into Liverpool, some little time ago, from the mines of which it was imported that he estimates he could as to its applicability to the same purposes as bone manure. The expense of importing it will depend, in a great measure, upon the cost of carriage to the mines to the several ports.



**DUBLIN AND KINSHAWNEY RAILWAY.**—We understand that the Commissioners of Public Works have agreed to advance the sum of £5,000 required by the directors for the proposed extension of their line to Dooly.



### LATEST CURRENT PRICES OF METALS

them at \$94. to \$97. per share. Leads and Sellers wanted at \$94., so are Shell.

from 256, to 255, gas down. Leeds and Selby wanted at 254, as was Sheffield at 253, and Wakefield at 252. Leeds and Selby, 251; Wakefield, 250; and South H. 249. Leeds and Selby, 247; Hull and Selby, 244; Great North of R. 243; Manchester and Leeds, 241; Sheffield and Rotherham, 239. Lee. Banking Company, 182; Leeds and West Riding, W.; Leeds Commercial, 141. Yorkshire District, 74; Yorkshire Agricultural and Commercial, 22; York C. and County, 101; York Union, 191. Leeds and Liverpool Canal, 100; Barnsley and Wakefield, 99; Leeds and Wakefield, 92. Leeds and Selby, 87. The L. 86. Leeds Old Gas Company, 72. Leeds New Gas Company, 57. Lee. Commercial Buildings, 24.

HULL, THURSDAY.—Prices were again driven to their lowest, and it was

H. B. WATSON & CO.

HULL, THURSDAY.—Prices were again driven to their lowest, and it is not u

**SUNDAY, THURSDAY.**—Prices began again driven to their lowest, and it is not so much the fact of the week's end as the fact of the low level at which they were proved dominant for those lines the prices of which seem most favourable to voters.—Birmingham and Derby Railway, 40c.; Birmingham and Gloucester 51c.; Grand Junction, 168c.; Great North of England, 63c.; Great Western, 97c.; London and Selly, 39c.; Leeds and Selly, 98c.; Liverpool and Manchester, 108c.; London and Birmingham, 106c.; London and Brighton, 57c.; London and South Coast, 100c.; Midland Counties, 77c.; North Midland, 60c.; South Eastern and Dover, 25c.; York and North Midland, 39c.; Edinburgh and Glasgow, 51c. to 52c.; Northern and Eastern, 63c. to 64c.; York City and County Bank, 37c. to 38c.; Yorkshire District, 51c. to 52c.; Hull, 7c.; Yorkshire Agricultural, 11c.; Sunderland Joint Stock, 11c.; Hull Dock Company, 127c.; Hull Gas Works, 2-1/2c.; Hull Fish and Cold Storage Co., 11c.; Hull Gas, 11c.; Hull Waterworks, 11c.

**BRISTOL FRIDAY.**—Some more days past we have had more business, but to-day our market is exceedingly flat, and closes heavily at all quotations. — Great Western Railway, 88½ to 90½, halves, 4½ to 4½½; 48th, 24 to 24½, Bristol and Exeter, 23½ to 24½; Bristol and Gloucester, 24½ to 25½; Birmingham and Gloucester, 24½ to 25½; Gloucester and Oxford, 24½ to 25½; Eastern Counties, 24 to 24½; Taff Vale, 62½ to 70½, London and Brighton, 25½ to 26½; Bristol Gas Company, 32½ to 33½; Clifton, 24½ to 25½.

**EDINBURGH, WEDNESDAY.**—Edinburgh and Glasgow Railway, 24½; Dalmeit and Edinburgh, 24½; Glasgow and Greenock, 23½; Glasgow and Garmick, 46½; Glasgow and Ayrshire, 37½; Wishaw and Coltness, 31½; Dundee and Arbroath,

LIVERPOOL, FRIDAY.—Grand Junction Railway, 1841; Lancaster and Preston R.R., Liverpool and Manchester, 1841; North Union, 71; Erie and Western

171. *York and North Midland, 24½*.—*Albion Bank, 25½*; *Borough, 13½*; *Bank of Liverpool, 2 ½*; *Liverpool Banking Company, 6*; *Manchester and Liverpool District, 10½*; *North and South Wales, 4½*; *Royal, 62½*; *South Lancashire, 11*; *Union, 10½*.

**MANCHESTER, THURSDAY.**—Birkenhead and Chester Railway, 284; Bir-  
mingham and Gloucester, 314; Manchester and Birmingham, 272; Manchester, Bir-  
kenhead, and Bury, 5-4; Manchester and Leeds, 632; Midland Counties, 722; North  
and Midland, Leeds to Derby, 661; Sheffield and Manchester, 54; York and North  
Eastern, 101; Lancashire and Yorkshire, 74; Manchester and Leeds, 632; North  
Eastern District, 101; Manchester and Salford, 164; South Lancashire, 6; Union  
of Manchester, 63; Manchester Fire and Life Assurance Company, 91; Union  
Fidelity Guarantee Company, 61.

**BIRMINGHAM, THURSDAY.**—London and Birmingham Railway, 178; to 180.  
London and Birmingham, 178; to 180.

*Western, 301. to 9-1.; Birmingham and Derby, 404½.; Birmingham and Gloucester 1½. to 5½.;—Birmingham Banking Company, 191.; Birmingham and Midland, 23½.; Birmingham and Staffordshire, 75½.*

**SALE OF COPPER ORES IN CORNWALL.**  
*Bumped May 19, and sold at Tyack's Hotel, Camborne, June 2.*

Mines, Tons.	Price.	Purchasers.	Mines, Tons.	Price.	Purchasers.
East Croft 83 ..	4 1 0.	Williams.	Stray Park 54 ..	25 6 0.	Williams.
"      81 ..	2 10 0.	Williams.	United H. 70 ..	4 0 0.	Williams.

ditto	61	2	0	0.	Veronesi.	ditto	69	4	0	0.	Veronesi.
ditto	67	7	3	0.	Williams.	ditto	66	4	9	0.	—
ditto	67	6	4	0.	—	ditto	61	4	2	0.	Mines Roy.
ditto	36	5	15	0.	—	ditto	53	11	11	0.	—
ditto	58	1	5	0.	P. Graesslin.	ditto	104	5	0	0.	—
ditto	334	1	0	0.	Williams.	ditto	104	5	0	0.	Williams.

ditto	54	7	0	0	Viriana.	East Ford	43	4	11	0	Williams.
ditto	53	6	10	0	—	ditto	26	3	9	0	Viriana.
ditto	70	4	9	0	—	ditto	26	0	9	0	Williams.
ditto	43	7	13	0	Viriana.	ditto	43	5	10	0	—
ditto	100	1	8	0	—	ditto	41	8	13	0	Viriana.
ditto	71	3	17	0	—	ditto	40	6	3	0	—
ditto	70	6	2	0	Freemans.	S. Bassett	82	3	10	0	English Co.
ditto	29	6	8	0	Viriana.	ditto	77	4	10	0	—

ditto 61	3	0	—	ditto 28	9	17	0	—
rewards 123	4	9	0	Nevill & Co.	ditto 24	6	0	0
ditto 91	3	4	0	Vivians.	Treigh C. 61	5	4	0
ditto 74	7	10	0	—	ditto 53	5	0	0
Consols 110	6	10	0	Freemans.	ditto 52	4	10	0
ditto 99	6	10	0	Nevill & Co.	Trefall 49	6	2	0
ditto 71	6	13	0	P. Grenfell	ditto 48	5	2	0
ditto 71	4	9	0	Williams.	ditto 53	5	0	0
ditto 71	4	9	0	Williams.				

ditto	91	4	10	0.	Freemans.	ditto	13	9	6	6.	—				
ditto	77	4	19	0.	—	Harmony	47	9	10	4.	Williams.				
ditto	77	4	19	0.	—	ditto	13	9	6	6.	—				
Vern	96	9	13	0.	Vivians.	ditto	18	3	10	0.	Vivians.				
ditto	66	5	9	6.	Nevill & Co.	Cardew	10	5	1	0.	Williams.				
Gray Park	55	2	7	0.	Freemans.	W. Harriet	42	3	9	0.	Freemans.				
ditto	24	3	6	0.	Crown Co.	ditto	49	4	11	0.	—				
TOTAL PRODUCE.															
East Wh. Croft	656	—	—	—	2292	5	0	United Hills	350	—	1250	4	0		
Longstone	—	—	—	—	—	—	—	East Pond	—	—	542	—	1421	10	0
North	370	—	—	—	1473	14	4	South Wh. Basin	231	—	—	—	1302	6	0

Trout	208	1370	72	Trout	189	954	13	0
Chinook	280	1635	2	Trout	162	792	7	0
Salmon	281	1338	13	Wh. Harmony	93	438	9	6
Salmon	233	1457	10	Caribou	62	308	14	0

Yrly Pars	.....	Wm. Stewart	.....	H2	.....	282	lb.
Average Standard,	1126	lbs.—Average produce,	79—Average price,	41	cts., 6d.—		
Quantity of ore,	5339	tuns.—Quantity of fine copper,	291	tuns 14 cwt.—Amount of			
orey,	17,407	cs., md.—Average standard of last sale,	1146	lbs.—Average pro-			
duce,	0	6j.					

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Time.	Amount.
Moss Royal Company .....	1874	\$27 3 0
Blackburn & Co. ....	1875	" 11 0

English Copper Company	359	1000	2041	14	0
Vitran and Sons	9164	1000	2081	2	9
Freeman and Co.	683	1000	2176	6	0
Greenhill and Sons	916	1000	22	15	0
Crown Copper Co.	24	1000	117	4	0
Boss, Williams, Neville, Brown, and Co.	820	1000	1867	17	0
Williams, Foster, and Co.	10043	1000	2198	2	0

Total ..... \$17,487 00

Tipper free for sale on Thursday night, at Andrew's Hotel, Redruth. — Mines and veins. — Fowey Consols, 2/2; Wheel Virgin, 3/4; Per Consols, 2/17; Levant, 1/2; Good Friendship, 1/3; Wheel Curtis, 9/; Bokalind, 9/; Wheel Vor, 8/; Providence Mines, 2/; Great Work, 4/; Harvey's Cove, 3/; Great Wheel Furnace, 3/; local Chippewas, 3/; South Wheel Neptune, 2/; Green Vein, 1/;—Total, 1823.

NO SALE on Thursday, the 10th of June.

[illegible]

ditto	40	222	90	19	7	Chas.	8	144	371	11	3	0
ditto	40	222	90	10	10	ditto	20	222	10	10	14	4
ditto	10	10	942	9	7	ditto	10	144	9	47	3	0
ditto	31	22	90	10	10	ditto	10	47	10	10	14	4
ditto	40	222	90	10	10	ditto	17	60	30	14	1	0
ditto	40	222	100	0	0	ditto	9	60	10	10	14	4
ditto	10	20	942	10	14	Crownhead	24	47	10	0	0	0
ditto	40	222	100	0	0	ditto	40	3	114	4	0	0
ditto	10	10	100	0	17	Virgin Goods	30	100	94	10	12	4
ditto	40	10	100	0	10	Cuba	20	20	14	0	0	0
ditto	70	14	100	0	10	Liverpool	20	4	104	0	0	0
ditto	70	14	100	0	10	Vine Ring	0	34	104	0	11	4
ditto	124	174	1742	0	0							

  

TOTAL PRODUCE.												
ditto	1700	4700	10	0	Crownhead	130	47	10	0	0	0	0
ditto	10	10	10	0	Virgin Goods	30	100	0	0	0	0	0
ditto	100	100	10	0	Cuba	20	100	0	0	0	0	0
ditto	100	100	10	0	Liverpool	20	10	0	0	0	0	0
ditto	100	100	10	0	Vine Ring	0	100	0	0	0	0	0
ditto	100	100	10	0								
Total	1000	1000	10	0								

  

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Company	Total	Amount
English Copper Company	100	1000 0 0
Frederick and Co.	100	1000 0 0
P. Gossard and Sons	100	1000 0 0
Wm. Widdowson and Sons	100	1000 0 0
Virgin and Sons	100	1000 0 0
Widdowson, Procter, and Co.	100	1000 0 0
Widdowson, Procter, and Co.	100	1000 0 0
Widdowson, Procter, and Co.	100	1000 0 0

	At S. C.	At S. C.		At S. C.	At S. C.
Reapers—Foreign, ton	00 00	22 00	Copper—Old	per lb.	00 00
For delivery			Cake p. ton	00 00	00 00
Zinc—English sheet	49 00	00 00	For cake	00 00	00 00
Quicksilver	per lb.	00 00	Tin	00 00	00 00
Iron—English bar, Ac.	p. ton	00 00	S. American		
Nail rods	7 00	00 00	Tin—English, blocks, ac. cwt.	00 00	00 00
Hemp	00 00	to 00 00	bars	00 00	00 00
Shoes	00 00	00 00	Foreign, Boxes	00 00	00 00
Cargo in	00 00	00 00	Strait	00 00	00 00
Fig. No. 1, Wales	00 00	00 00	Peruvian	00 00	00 00
No. 1, Clyde	00 00	00 00	Tin plates, No. 1, p. box	00 00	00 00
For., Swedish.	00 00	12 00	No. IX.	00 00	00 00
Russian, C&W	10 00	12 00	Washed p. box	00 00	00 00
For	14 00	00 00	Lead—Sheet melted	p. ton	10 00
Gouriev	14 00	00 00	Shot, patent	22 00	00 00
Archangel	14 00	00 00	Red	22 00	00 00
Swedish	10 00	10 00	White	22 00	00 00
Pagot	10 00	00 00	Pig Lead—English	10 00	00 00
Copper—English sheeting	00 00	10 00	Spanish	10 00	00 00

Silver coin to Hamburg .....	133,500 ounces.
"    "    "    Bombay .....	1,000       "    "
Silver bars to Hamburg .....	134,100       "    "

The amount of silver coin and bullion shipped at Dover for Calais in the month of April was 436,370 oz.; gold ditto, 156 oz.

CURRENT PRICE OF GOLD AND SILVER.

**COAL MARKET, LONDON.**

**MONDAY.**—Prices of coals per ton at the close of the market:—

WEDNESDAY. — Be Robson's Hartley 4 3 — Carr's Hartley 10 Holywell 14 8 — Nelson's West Hartley 17 6 — New Tanfield 13 6 — Ord's Redheugh 14 6 — Wm Wylam 15 2 — Wall's End Clossell 16 — Killingworth 16 9 — Wharfedale 17 6 — Belmont 19 — Braddyll's Heaton 20 6 — Hutton 19 6 to 20 — Lambton 20 — Musgrove 10 0 — Stewart's 20 6 — Whitwell 15 9 — Tens Heaton 13 — Tern 19 — Cowpen 17 6 — Hakeley 17 6 — Howard's Netherthorn Main 17 6 — Llanegwarch Coal 21 — South Gureth (Cinders 20) — Shivey's 20.

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### PRICES OF MINING SHARES.

117	Charlottesville	—	550
120	Craig Brawns	43	430

117 Charlottown.....	—	210	FOREIGN MINES.
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### RAILWAY SHARE LIST AND TRAFFIC RETURNS.

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including Northern and Eastern Railway toll. ? Boat and toll to Easton  
 salaries about £100. per week, included in the returns. ; The Liverpool toll  
 weather toll is deducted.

THE LONDON GAZETTE-SAMERUETS

SHIVAY.—W. Chagotaw, Long arc, bristle collar.—F. A. Hryhura, Forest path, mountain road, within same neighborhood.—F. J. Foyell, and T. and J. Goss, St. Louis.

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